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CONTENTS.

AGRICULTURE.

PAGE.

Report and Constitution of the Black-Oak Agricultural Society,.....113
Lectures on Agriculture, by Charles Daubeny, M. D., F. R. S., M. R. I. A., &c., Sibthorpian Professor of Rural Economy in the University of Oxford. (Continued from page 76.).....117
Stir the Earth often,.....126
The Indian Corn Crop,.....127
Poultry Management,.....129
Crop of Corn-Stalks,.....131
Notes from my Diary. By C. M. Bement.,.....132
An Experiment,.....133
Oat Hay,.....135
Farm Accounts,.....138
Treatment of the Horse. (Concluded from page 89.).....140
The Treatment of Sick Animals,.....143
Keeping of Cows,.....145
Curing Bacon.....ibid

HORTICULTURE.

The Kitchen Garden. By James Main, A. L. S., author of "Flowers," and "Fruit Trees.",.....146
On the cultivation of Asparagus. By Samuel Pond, of Cambridgeport.,..152

FLORICULTURE.—Perennial Border Flowers.....155
The Rose-Bug,.....161
On changing the colors of the Flowers of the Hydrangea,.....162
Budding Roses.....163

THE ORCHARD.—Of Pruning. (Concluded from page 107.).....163

MISCELLANEOUS.

A Steam Boiler worth having; Prussic Acid; Oxford Sausages; Period of Gestation in Cows.....166, 167

GARDENER'S CALENDAR FOR MARCH.....168

THE SOUTHERN AGRICULTURIST.

(NEW SERIES.)

Vol. II. FOR MARCH, 1842. No. 3.

For the Southern Agriculturist.

REPORT AND CONSTITUTION

OF THE BLACK-OAK AGRICULTURAL SOCIETY.

At a meeting of the Black-Oak Club, held on the 27th January, the propriety of forming an Agricultural Society was taken into consideration; and a Committee of three was appointed, consisting of the following gentlemen, Stephen G. Deveaux, H. W. Ravenel, and H. F. Porcher, to report upon the objects and advantages of forming such a Society, and to draft a Constitution.

At a subsequent meeting held on the 10th inst., the Committee submitted the following Report and Constitution for the consideration of the meeting.

REPORT.

The formation and organization of Societies for mutual interchange of opinions, and for the sake of unity of action, has been found to be the most efficacious mode of concentrating the minds of men upon any particular subject, and by rigorous concert, of accomplishing what individuals alone, would fail in doing.

Agriculture, like every other branch of human knowledge, has been advanced by these associations. They may be judged by their fruits. Wherever they exist, the evidence of their utility is to be found in the improved state of Agriculture, and a zealous emulation for further improvement. They awaken a spirit of inquiry and investigation, which results in good, not only to the members, but the influence is felt through the whole community.

We will now state briefly, a few of the advantages which present themselves.

Whenever there is any interest to be protected, or any common object to be promoted, nothing is so well calculated to do it, as the co-operation of all who have these objects in view. "Where the treasure is, there is the heart also;" whatever interests us deeply, will occupy our thoughts, and nothing tends so strongly to elicit truth, as a comparison of our thoughts and opinions. In coming together, therefore, for mutual information, each one brings in his share of knowledge. Some who have passed through a long life in Agricultural pursuits, from their observation and experience, will be able to impart much useful information. Others who are commencing life, will be glad to receive it.

One of the greatest obstacles in the way of improvement in Agriculture is, that there is no knowledge accumulating for future beginners. Each one who commences his life as a planter, has the same long ordeal to pass through, of collecting his own knowledge from observation and his own experience.

In as far as Agriculture as an art is considered, this must be so. Like any other artizan, he can acquire only by long practice and diligence, the easiest and most economical mode of tilling the soil, and the other manual labor required. But Agriculture as a science embraces a much wider field.—It includes the mode of collecting and applying manures—the rotation of crops—the alteration and improvement of soils—the selection of seeds, and their adaptation to particular qualities of land—in short, organic chemistry and botany, are valuable auxillaries to the science of Agriculture.

There seems to be an unfortunate prejudice, still lingering in the minds of some, that no knowledge, but that which is derived from experience, is at all available to the Agriculturist. That book-knowledge and practical Agriculture cannot go together.

It has unfortunately happened too often, that the zeal of some enthusiasts, in making experiments, has not been tempered by ordinary prudence, and their failure has had the effect of confirming this notion. But as well might the young physician be told that he must not make use of the knowledge which has been accumulating for ages to assist him, but that he must apply himself to practice and observation, and learn from Nature herself, the operation of her laws. Were this the case, the medical profession would be at once reduced to the same state that Agriculture now holds amongst the Sciences.

But again—our State is essentially Agricultural. Our laws should be framed with a wise and fostering regard to this branch of industry, and for the protection and good management of our negro property.

Suggestions coming from organized bodies of men, who have these very objects in view, would meet with more attention and possess more authority with the Legislature, than from individuals.

But another advantage we shall gain by union, is the strength we shall possess, and the greater ability to resist all encroachments upon our rights. The formation of these Societies, is the first step towards a general co-operation of the whole Agricultural interest. It is a notorious fact, that for want of union among themselves, the planters are frequently subjected to hardships and impositions, and without union on their part, this subjection can never be overcome.

This is the age of monopolies.—Leagues and associations are formed for the protection of every interest. It becomes therefore, a matter of self-preservation to us, that we unite in order to resist more successfully, all practices that are unjust in their operation. One individual may feel this injustice ever so keenly, but he could

no more resist it alone, than he could the course of a mighty river, he would be swept along in the current, and his efforts would be unavailing.

We have numbers, we have intelligence, we have wealth, we have all the elements of strength for righting ourselves, but we want action, unity of action. We represent very appropriately, the bundle of sticks in the fable, which singly a child may break, but when united will resist the strength of a man.

We therefore submit the following Preamble and Constitution, for the consideration of this meeting.

CONSTITUTION.

WHEREAS it is expedient for those having a common interest, to unite themselves together, in order that they may co-operate more effectually in promoting their object; and whereas the formation of Agricultural Societies has been of great benefit to the planting interest, in diffusing information and in awakening a spirit of inquiry for further improvement, We, therefore, the planters of St. John's, (Berkley,) do hereby associate ourselves, for these purposes, and subscribe our names to the following Constitution, viz:

ARTICLE 1. This Society shall be called the "Black-Oak Agricultural Society."

ART. 2. The officers of the Society shall be a President, Vice-President, and a Secretary and Treasurer.

ART. 3. It shall be the duty of the President, to preside at all its meetings; and whenever necessary, he may call extra meetings by giving timely notice. In his absence the duties shall be performed by the Vice-President.

ART. 4. It shall be the duty of the Secretary and Treasurer, to receive and keep the funds of the Society, to pay out all demands against the Society, and at each anniversary meeting, to make a report of all receipts and expenditures for the past year. He shall make and keep a record of the proceedings of every meeting, and at the expiration of his term of office, shall hand it over to his successor. He shall also at the instance of the Society, carry on correspondence with other Societies, and with individuals, for the purpose of obtaining information on any subject connected with the Society.

ART. 5. —— members shall constitute a quorum for the transaction of the ordinary business of the Society, but it shall require a majority of three-fourths of all the members, to amend, alter, or rescind any of the articles of this Constitution.

ART. 6. The regular meetings of this Society shall be held at Black-Oak, on the first Monday in March, August, and December in each year.

ART. 7. The first regular meeting of the Society shall take place on the first Monday of March next; and the first Monday of March in every succeeding year, shall be celebrated as the anniversary; on which day, there shall be an exhibition of live stock, grain, Agricultural implements, and any production of the soil; which may offer for the premiums.

ART. 8. At each anniversary meeting there shall be elected a Committee of Inspection, to consist of five members, whose duty it shall be to examine and report upon whatever may be offered for exhibition, and to award such premiums as the Society shall direct. They must also inspect the growing crops, and the general economy of plantation management, and make a report of their proceedings at any of the regular meetings.

ART. 9. Application for admission to the Society, must be made through one of the members, and a majority of three-fourths of the members present will be necessary for an election.

ART. 10. Each member shall pay to the Treasurer at the anniversary meeting, the annual contribution of two dollars in advance.

ART. 11. At every anniversary meeting, the Society shall determine upon the premiums to be awarded at the succeeding anniversary.

ART. 12. The officers of this Society shall be elected annually by ballot, on the first Monday in March—*provided*, if there be not a sufficient number of members present to form a quorum, the same officers shall serve until the next regular meeting, or until an election be held.

After due consideration, the Report and Constitution were adopted, and the members subscribed their names thereto. An election was then proposed, for officers of the Society, and the following gentlemen were elected to serve until the first Monday in March, 1843, viz:

SAMUEL DUBOSE, *President.*
ISAAC PORCHER, Sr., *Vice-President.*
H. W. RAVENEL, *Secretary and Treasurer.*

The Society was then declared duly organized, and on motion it was *Resolved*, "That the Report, and Constitution accompanying it, be sent to the Southern Agriculturist for publication."

The Society then adjourned to meet again on the first Monday in March next.

H. W. RAVENEL, *Secretary and Treasurer.*

LECTURES ON AGRICULTURE.

Three Lectures on Agriculture, delivered at Oxford, on July 22nd and Nov. 25th, 1840; and on Jan. 26th, 1841; in which the Chemical Operation of Manures is particularly considered, and the Scientific Principles explained, upon which their efficacy appears to depend. By Charles Daubeny, M. D., F. R. S., M. R. I. A., &c., Sibthorpian Professor of Rural Economy in the University of Oxford. Oxford. 1841. 8 vo., pp. 106.

(Continued from page 76.)

In the second lecture the author brings forward in detail the scientific principles upon which the chemical action of manures appears to depend.

"It may assist us, perhaps, in understanding the mode in which the various matters intermixed with the soil, with the view of improving its quality, may be supposed to operate, if we begin with tracing the successive steps, by which mankind have advanced from the simplicity of early practice, to that more complicated and artificial system of husbandry which prevails in most civilized countries at the present day.

"In order to become acquainted with the rude methods adopted in the first ages of the world, it is scarcely necessary to go back to the records and traditions of that period; without giving ourselves this trouble, we may obtain a sufficiently just idea of their mode of procedure, by referring to the practice of husbandry adopted by the early colonists in the wilds of America, or by that in use amongst those, who in the present day emigrate from the eastern portions of the United States into the regions of the far West.

"In the virgin land on which the labors of these first settlers were expended, whether it were in Virginia or the Carolinas last century, or in Kentucky and Michigan in the present, the expedients for refreshing and invigorating the soil, which are resorted to in older countries, are found to be wholly superfluous.

"Judging indeed from the crops obtained for several years after it has been first reduced to cultivation, the ground might in many instances be pronounced to possess an inexhaustible store of fertility, since the same crops admit of being repeated year after year, with no apparent diminution in the amount of produce, and with no further care on the part of the colonist, than that of simply turning up the soil and introducing seed.

"Such is represented to have been the case even with the tobacco, when first cultivated by the early settlers of Virginia, where, on land now requiring careful tillage, and yielding but a scanty return, this exhausting species of crop is said to have been repeated year after year without any perceptible diminution.

"In Kentucky we are told of soil, that has yielded the finest crops of wheat or of maize, for 25 or even 50 successive years, and that without the addition of any kind of manure; whilst in the State of Illinois, some portion of the territory are said to have been

cultivated with profit in this same way, from the first period at which the country was settled.

"During my late tour through the western portions of the United States, I had frequent opportunities of witnessing the system adopted by those, who first establish themselves in a new settlement.

"In these wild regions, unlike to those portions of the globe with which we Europeans are familiar, forest and pasture land are seldom found intermixed; but we meet at one time with vast tracts altogether destitute of timber, and at another with forests, taking such entire possession of the soil, as to leave no intervals for any sort of culture for many hundreds of miles.

"The former description of country constitutes the praries, the latter the woodlands, of North America.

"With regard to the former, various theories have been propounded, to account for the entire absence of timber over such extensive tracts.

"Monsieur Decandolle offers the following solution:—"The right of prior occupation,' he says,* 'explains how it happens that forests and prairies are found mutually to exclude each other. For if by any cause a forest is established in a given place, the shade of the trees, together with the greediness with which their roots absorb the nutriment, and the manner in which the fibres of the latter are interlaced, will prevent the grasses from shooting up underneath. If, on the contrary, the prairie is first developed, then, even supposing that the seeds of the trees do from time to time germinate, yet their roots in the young state cannot easily pierce the close network of roots and stems already existing on the spot; and even if they succeed in doing so, are starved by the voracity of the grass roots, which are more numerous and more developed than their own.'

"But still the question occurs, what has given to the forest in the one case, and the meadow in the other, that prior occupancy, to which their power of maintaining entire possession of an extensive tract may be justly attributed?

"It is probable, I think, that in the climate and latitude alluded to, forests would usurp dominion over the greater portion of the country, if no extraneous cause interfered to arrest them. It is only necessary therefore to explain, why large tracts should be found wholly denuded of timber; and this it seems most reasonable to attribute to the practice that prevails amongst the aborigines, of annually setting fire during summer to the plains, in order the more readily to take deer and other wild game.

"For the extreme dryness which prevails at that season, causes a fire, when once kindled, to spread in all directions, until it is either stopped by the intervention of a river, or put out by meeting with a ridge, or tract, so entirely destitute of vegetation, as to afford no combustible matter to maintain it.

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* Physiologie, vol. iii.

"Hence those vast plains that lie to the west of the Mississippi, not being intersected by any barren range of hills, nor yet traversed by large rivers, have in the course of years been converted into prairies, the growth of timber being from time to time prevented by the cause assigned, until the luxuriant herbage at length so pre-occupies the soil, as itself to stifle all other kind of vegetation; whereas, over a wide tract extending along either side of that great stream, the numerous tributaries that pour their waters into it, oppose a limit to the progress of such fires as may occur, and thus enable the forests to maintain their ascendancy.

"Be this however as it may, we can at least assure ourselves, that the absence of timber in the prairie country is by no means an evidence of sterility—on the contrary, the immense accumulation of decayed vegetable matter, which has resulted from the growth of herbaceous plants during so many centuries, is found to constitute a soil of almost unrivalled productiveness.

"The colonist therefore, in first settling down in such a region, has little room for the exertion of any extraordinary skill or industry, having around him an unlimited extent of land, which in its actual condition affords the richest pasturage for his flocks and herds, and which, whenever he takes the trouble of turning it up, and scattering seed over it, will generally repay him largely for the labor expended.

"Harder indeed is the lot of him who takes up his abode within the precincts of the primeval forests of the western world, since, before he reaps any advantage from the land he calls his own, he must undertake the severe task of clearing it of the timber with which it is encumbered.

"This, however, being accomplished, it is seldom that he is disappointed in the quality of the soil that lies underneath; and for the most part his rude and imperfect methods of culture afford him for several years as ample a return, as the utmost exertion of skill and experience can secure in the older countries from which he has migrated.

"And this was even the case in parts of the Union, which are by no means remarkable for their fertility at present; as for instance, in the States of New England.

"'When the tract on the Green mountains in Massachusetts was first settled' (says Dr. Dwight), 'the same exuberent fertility was attributed to it, which has since characterized Kentucky. From those regions the paradise has travelled to the western parts of the State of New York, to New Connecticut, to Upper Canada, to the countries on the Ohio, to the south-western territory, and is now making its progress over the Mississippi into the newly purchased regions of Louisiana. In consequence of the long accumulation of vegetable mould, regions, even if naturally sterile, hold out at first the promise of an abundant return to the cultivator.'

"Now there is little reason to doubt, that the first Egyptian

and Phœnician settlers in Greece, or the first Greeks who peopled the shores of Italy or of Spain, would find themselves placed under circumstances as favorable to husbandry, as the present emigrants in the far West.

"It would seem, indeed, that the extraordinary exuberance of newly peopled countries, wherever at least the subsoil and climate are such as in any degree to allow of the spontaneous growth of timber, may have given countenance to those visions respecting the Golden Age, in which the teeming imaginations of the inhabitants of early Greece delighted to indulge.

"But in the case of the colonist of antiquity, as in that of the settler in the new world at the present day, a period at length must arrive, when the ground, exhausted by unintermitted tillage, would cease to yield him a profitable return; in which case, so long as abundance of good land remained unoccupied, the most obvious course for him to pursue, would be that of abandoning his present possessions, and of advancing further into the vacant territory, until he lighted upon a tract better suited to his purpose.

"This accordingly is the practice often adopted in the United States, not only in the newly settled countries of the West, but even in the older States of Georgia and the Carolinas, where the cultivation of cotton, however profitable it may be at first, speedily exhausts the land, and reduces it to sterility; so that in passing through these districts, we frequently see estates which had once yielded an abundant return, since abandoned by their possessor, and becoming again a portion of the original wilderness.

"And disheartening as it may at first sight appear to him, to submit to the Sisyphean labor of bringing continually fresh land under his dominion, and again to relinquish his conquests after so short a period of occupation, the plan alluded to is the only one which presents itself to the settler in a new country, for restoring to the earth that fertility of which it has thus been deprived.

"It is in fact a substitute for the method of fallowing which constitutes the first step in an artificial system of culture; and it seems probable, that the early colonists in the old world may have been led to introduce this latter practice, from having observed that soil, which had become unfruitful in consequence of excessive cropping, gradually resume its pristine productiveness when abandoned for some time to itself.

"For although in the first ages of the world, the colonists may have adopted the same custom which we find now prevalent in America, and may have pushed further and further into the wilderness in proportion as the land already in their possession became exhausted, yet it is evident, that the period for such unrestrained emigration would have long passed away, at the time when, as history informs us, the Pelasgi emigrated into Italy, the Egyptians under Danaus established themselves in the Morea, and the Israelites took possession of the Holy Land.

"In all these cases, the colonists were not only destitute of those facilities for moving to great distances, which steam navigation, and the other improvements of modern times afford to the settler in the United States, but were circumscribed in their movements by the hostile tribes that hemmed them in, which, if somewhat lower in the scale of civilization than themselves, were, at least, not so utterly unable to cope with them in the arts of war, as the wild Indian of the present day finds himself, under ordinary circumstances, to be with the back-woodsman of European extraction.

"Hence, being more generally obliged to remain stationary upon the spot in which they had at first established themselves, the colonists of old would soon be driven to resort to a system of fallowing, in order to give back to the land a portion of that fertility, of which their mode of culture had in the first instance deprived it.

"Accordingly, we find in the Hebrew law, every seventh year set apart as a period of entire rest, a command, it is observed, grounded, not only on religious, but also on political and civil considerations, with the view, that is, of preventing the soil from being worn out by continual tillage.

"That, which in the Mosiac dispensation had been enjoined as a religious duty, was adopted also in the early times of Greece and Rome from motives of expediency.

"Even so late as the time of Virgil, it seems to have been the practice to allow the arable land to lie fallow every alternate year. From which it might seem, as if no very marked advance in the principles of husbandry had been made since the Homeric age, considering the lapse of time that had intervened, since it had not yet been fully understood, that a judicious rotation of crops would stand in the place of fallowing, whilst the practice of manuring land, which is the next step in the system of improving it, had already been adopted in the earlier period alluded to.

"No notice, it is observed by Cicero, is made of manuring by Hesiod, so that we may perhaps conclude, that the practice was of recent introduction at the period when Homer lived.

"In the age of Virgil, however, some progress seems to have been made towards that which constitutes, perhaps, the grand improvement of modern times—I mean the rotation of crops; for the Roman poet recommends the arable land to lie fallow every alternate year. Showing his acquaintance with the fact, that the substitution of pulse or other leguminous plants will refresh the soil, as well as the practice of fallowing, 'for thus too,' says he, 'by a change of crop, the ground is made to rest.' The Romans, though conscious of the utility of alternating leguminous with farinaceous crops, or, as we now express ourselves, restorative with exhausting ones, did not seem to know, that a rotation might be introduced, which should entirely supersede the necessity of fallowing in many soils, and render its recurrence much less frequent

in all. Pliny says that a crop of beans enriches the ground like manure.

"Whatever, therefore, may be the comparative merits of the ancient and modern systems of husbandry in other respects, it would seem that in this one, at least, a vast step has been gained since the days of Virgil and Columella. Nor are we less in advance of these writers in the article of manures, which, no longer limited, as with them, to animal and vegetable matters in a state of decomposition, or to lime and certain kinds of marl, comprehends at present a great variety of mineral substances, with which the ancients were wholly unacquainted.

"Amongst these we may enumerate, 1, phosphate of lime or bone dust, so useful in the turnip, potato, and grass land of this country: 2, the nitrates of potass, and of soda, which are said to increase our crops of wheat and other cereal grasses in a remarkable manner: barilla, or kelp, which has also been employed with success for corn crops: 4, common salt, which is considered beneficial to the same on light soils: and 5, gypsum, the efficacy of which is admitted in leguminous crops, and will probably be found to extend to others also.

"None of the above manures, it is probable, were known by the ancients, though Virgil recommends nitrum (which appears to have been carbonate of soda or potass, and not, as commonly translated saltpetre), mixed with the dregs of oil, as a steep to make the seed-grain swell, and suggests our scattering over the exhausted land ashes, which probably derived their fertilizing property in great measure from the gypsum they contain,

——————————— neve
Effetos cinerem immundam jactare per agros.

"The great advance indeed which has been made within two centuries only in the art of husbandry, may be calculated from this one fact alone, namely, that the population of England in the time of Queen Elizabeth amounted, according to the estimate of Guicciardini, to not more than two millions, whereas at present it probably exceeds fourteen; yet there is no question, but that the present inhabitants are better fed than were their ancestors, although it can hardly be supposed, that the quantity of land now in cultivation exceeds seven times that which had been brought under tillage in the year 1600.

"Something indeed must be allowed for the amount of corn introduced into England from foreign countries, which in 1831 (in which year a larger quantity had been imported than at any period before or subsequent) was estimated at 3,541,809 quarters, being less than one-fourteenth of the whole quantity consumed in the United Kingdom. But even with this deduction there will remain a sufficient overplus, to evince the greater productiveness of the soil under its present management, than under that of our ancestors.

"Let us not, however, indulge too much in a feeling of self-satisfaction when contemplating our proficiency in the art of husbandry; for considerable as the advances may be, which have been made from the first rude efforts of the earliest occupants of the soil, yet still greater, it may be suspected, is the distance which separates us from that ideal goal, towards which the efforts of the agriculturist ought to be directed, at which empiricism would give place to principle, and theory direct with ease and certainty the operations of the husbandman.

"'As there is no profession,' says Liebig, 'which can be compared in importance to that of agriculture, so there is none, in which the application of correct principle would be productive of more beneficial effects. Hence it appears quite unaccountable, that we may vainly search for a single leading principle relative to this subject in all the writings of agriculture and of vegetable physiologists.

"'The methods employed in the cultivation of land are different in every country and in every district; and when we inquire the causes of these differences the answer we receive is, that they depend upon circumstances *(les circonstances font les assolements)*. No answer could show ignorance more plainly, since no one has ever troubled himself to ascertain what these circumstances are. Thus also, when we inquire in what manner manure acts, we are answered by the most intelligent men, that its action is covered by the veil of Isis; and when we further demand what this means, we discover merely that the excrements of man and animals are supposed to contain an incomprehensible something, which assists in the nutrition of plants, and increases their size. This opinion is embraced, without even an attempt being made to discover the component parts of manure, or to become acquainted with its nature.'

"Whilst an eminent chemist expresses himself in these terms with respect to the labors of physiologists, the judgment passed upon the researches of chemists by a distinguished botanist of our own country is not more favorable, since he quotes with approbation a remark which had been made to him by a friend, to the effect 'that chemistry has hardly advanced the art of agriculture a single step, but that the latter remains, after all the investigations of the chemists, a mere empirical art,'*

"I trust, what I have said in my former lecture will convince you, that both these general statements must be received with some grains of allowance, and that both chemistry and vegetable physiology have already rendered good service to agriculture; but it cannot be denied, that experience and tradition, are still the main sources to which the farmer usually looks for information, and that science is as yet far from having shed any steady light over the obscurity in which his processes are veiled.

"It is evident, that in order to determine in what precise manner

* Lindley's "Introduction to Botany."

the different kinds of manure can improve the condition, and increase the quantity of the plants exposed to their influence, it will be necessary, in the first place, to ascertain from what source or sources vegetable substances obtain their nourishment; and it is certainly somewhat humiliating to reflect, that notwithstanding the attention paid to the elucidation of this subject by many distinguished men of science, a question so fundamental should have remained in part unanswered, until the celebrated German chemist, Liebig, applied himself to its investigation.

"The elements of which the structure of every perfect plant consists, may be referred to two distinct classes: namely, such as are capable of being received into the vegetable organization in the condition of a gas, and such as are not.

"The former class of elements comprehends oxygen and hydrogen, which, either separately or in the condition of water enter into the constitution of every plant: carbon, which though of a fixed nature when alone, is converted into a gaseous state when combined either with oxygen or with hydrogen; and nitrogen, which is volatile, both when alone, and when in combination with hydrogen, as ammonia.

"The three former are universally present in plants, the latter more commonly so than was formerly supposed, although in smaller proportion than the rest; and as all four, though present in the soil, are also capable of volatilization, or in other words, of existing permanently in the atmosphere, it is quite open to conjecture, whether plants obtain their elements from the one source or from the other.

"The second class of constituents, comprehending substances found in plants which are incapable of being converted into vapour at such temperatures as they are exposed to in nature, consists of the alkalies, earths, and metallic oxides, which by their presence give firmness and solidity to the vegetable structure, and perhaps, by being interposed between the particles of living fibre, may contribute in some other manner, as yet imperfectly understood, to impart to it the properties it possesses.*

"These of course cannot be conveyed through the medium of the atmosphere, and hence the natural inference would seem to be, that they are derived from the soil in which the plants are fixed.

"Yet this conclusion has been combated by many physiologists, who allege, that the above ingredients are found in plants even when not present in the soil from which they proceed, and a German chemist, Schrader, was honored with a prize from the Berlin Academy, for having, as was thought, established this position.

"Saussure, however, has shown, that the same plant, when grown upon a calcareous soil, contains more calcareous matter than it does in a siliceous one; and I have myself instituted a series of

* See Dr. Prout's Treatise on the Stomach, &c. introduction, and my Introduction to the Atomic Theory, p. 30.

experiments, which tend to demonstrate, that in proportion as you deprive a vegetable of all external means of obtaining its fixed constituents, in that degree you diminish the quantity of them, which it will contain; whence the natural inference would seem to be, that if it were possible to intercept completely all the channels by which it could derive these principles, none such would be present in its composition.

"Thus the latest experiments, confirm, what both reason and analogy tend to suggest, and relieve us from the necessity of resorting to a supposition so paradoxical, as that of attributing to the vegetable organization, the power of itself elaborating the alkaline or earthy matters which it may chance to contain.*

"It follows, then, that whichever of this class of constituents enter necessarily into the fabric of the vegetable, must be present also in the soil in which it grows; and hence we may derive an important lesson, as to the application of the substances employed as mineral manures in encouraging the growth of particular plants, and also as to the injurious effects of certain crops upon the growth of those which are to succeed them.

"Every known vegetable seems to contain a given proportion of alkali—soda near the sea, potass in places more inland.

"The former of these may readily be referred to the salts present in the waters of the ocean, whilst the latter may be supplied by the decomposition of those rocks into which it enters as an ingredient.

"But the decomposition of a rock proceeds only at a certain and that a very slow rate, and until it is complete, the alkali will be retained by an affinity much too powerful, to allow of its being extracted by the absorbing surfaces of the roots.

"Hence, supposing the crop already raised on a field to have absorbed all the alkali which the subsoil at the time contains, it is evident, that no second crop of the same description can succeed, until the ground has lain fallow long enough, to admit of a fresh supply of alkali being obtained by a continuance of the process of disintegration, or until this necessary ingredient has been added to it from without.

"Hence the advantage in these cases of such manures as wood-ashes, because they contain much potass, and even of the excrements of animals, since these also are not destitute of that principle."

(To be continued.)

* Lampadius has lately instituted some experiments, which seem at first sight to militate against the notion, that the inorganic constituents are dependant on the nature of the soil in which they grow. He divided a piece of ground into five equal parts, each twenty feet square; after measuring them equally, he strewed over the first 5lbs. of finely powdered quartz; over the second, the same quantity of ammonia; over the third, as much chalk; over the fourth, as much of carbonate of magnesia; the fifth being left without any addition. A certain quantity of wheat was sown in it and the crop analysed, but no difference in their respective fixed ingredients was discoverable. Mayer, however, justly observes, that these experiments prove nothing, because the earths added were not in a soluble condition, and therefore could not affect the constitution of the plants.

STIR THE EARTH OFTEN.

IT is necessary to stir the earth often among vegetables, not only for the purpose of keeping down the weeds but the purpose of keeping it loose for the passage of the roots, for the admission of the air and water, and to form finely pulverized soil on top as a protection against drought. When the earth is hard the water in time of rain will run off from some places, when a mellow soil on top would readily imbibe it.

In some cases we have observed that after a powerful rain, where the ground was hard it was not wet down half an inch while it was thoroughly wet where the surface was loose and fine. In dry weather the advantages of frequently stirring the soil are equally great; it prevents in a measure, the evaporation of the moisture, as loose earth will not conduct off the moisture so readily as close earth.

We are aware that some persons will say "it is a poor rule that will not work both ways," and if loose earth readily absorbs the rain it will allow the escape of moisture, but this is not the case as experiments plainly prove; we must be governed by facts that are well established, though there may be a seeming inconsistency from our not understanding the operations of nature.

Water falls down by its own weight and will readily sink into the loose earth, running down between the particles; but if the ground be close and hard, and very dry, it will run off, barely wetting the surface. The dryness, which at a first view would lead one to suppose that it would at once imbibe the water, serves only to repel it. This peculiar property of every dry substance is shown by throwing water on a floor where there is much dry dust. It will remain in large drops, and can be blown about over the floor as the dry dust repels the drops and prevents their spreading.

The evaporation of moisture from the ground is by a very different process in nature from that of gravitation by which the water falls or tends downwards; in evaporation it is drawn up and passes through some medium, first through the top of the earth and then through the air. Fine particles of earth are a poor medium for conducting off the moisture under the surface, while it readily passes off through a close, hard body of earth. This fact will appear evident to any one, who, in a dry time examines the state of the soil as to moisture; below the fine loose earth that is often stirred, and the hard earth in the path or place beside it, that has long remained unmoved.

Many experiments have been made by hoeing frequently in a very dry time, part of a piece of land on which corn or other vegetables were growing, and leaving a part; and it has been found that the crops suffered much less from drought where the earth was often stirred.

Writers on the advantages of frequent hoeing attribute its valuable effects, in this respect, to the dews penetrating more readily the

fine earth, and passing to the roots of plants, but this opinion is erroneous, for a heavy dew will penetrate the fine earth but little; it will lay mostly on the top and soon evaporate when the sun shines upon it.

In this country the dews are too light to penetrate to the roots of the plants, as they do not go so deep. The great object is to retain the moisture in the earth, and prepare the surface to receive and convey the rains directly downward, even when they come suddenly, in plentiful showers, and this is done most effectually by stirring the earth frequently and finely.

Some farmers hoe their corn only twice, excepting they cut up the weeds after the haying season is over to prevent their producing seed. Others use a light horse harrow and stir the earth frequently, thinking there is a great advantage in this method that will well repay the expense, which is but trifling where the ground is light and free from obstructions. [*Yankee Farmer.*

THE INDIAN CORN CROP.

We give some sketches of our experience and practice, not on the idea that we have made advances beyond other cultivators, but rather as our acknowledgment of the debt we owe those enlightened and patriotic men, who have kindly favored the public with accounts of their practice. We began with planting in hills three and a half or four feet apart each way. The corn was dropped on a shovel full of barn manure, five kernels in a hill, with very little attention to location. In dressing the corn, laborers were directed to draw the mould liberally towards the plants; when the dressings were completed, each hill was nearly as large as a bushel. All this was done in accordance with general management, and our first admonition of error was in the effects of strong winds on the plants. The earth was raised nearly as high as the first joint of the spire; the wind operated with almost the power of the lever upon it, and in certain stages of the growth numerous spires were destroyed. The practice of forming large hills was gradually abandoned, and the benefits were so manifest both in the greater safety of the plants and their more vigorous growth, that we at length requested the laborers to leave the fields after all the dressings level enough for mowing. This has often been effected, and without perceivable injury to the corn crop.

Some dry seasons convinced us the practice of placing manure directly under the corn is wrong. Plants so manured, wilt much sooner under the influences of the sun, and when this effect is produced a succession of weeks, there will seldom be much more than a crop of stalks. And even if no drought take place, it may be reasonably doubted whether a crop of corn will be at all increased by planting directly on manure. The influences of it when thus

placed are manifestly the greatest in the first of the season, when the corn requires the least nourishment. At the time when the ears begin to form, and an abundance of food is wanted, the energies of the manure begin to decline, and a large portion of the ears set in the stalks never reach maturity. Whenever manure is applied to this crop, it should be in such manner that the greatest influence of it will be felt in the last of the season. Evenly spread over the surface, and lightly covered with a harrow or cultivator, is probably as good an application of manure as we can make, without we submit to the expense of a top-dressing about the time of the third hoeing, which would be very efficacious. Where circumstances will admit of such a course, we think it best to make the land sufficiently rich two or three years before the corn is planted. English mowing land, which has been liberally dressed with compost manure a succession of seasons, is a favorable situation for corn. The sward should be turned over as evenly as possible, then the new made surface thoroughly pulverized with the harrow, cultivator, and roller; after these operations the corn may be planted. It will appear rather feeble and unpromising when it first springs up, but will continually increase in vigor with the progress of the season, and yield more bushels to the acre than we have ever obtained under any other management.

We have supposed that manure furnishes too much food for the corn in the early periods of its growth; in the language of farmers, forces it; when there is only the soil to feed the plants and this has been made sufficiently rich, the food is evolved in an increasing ratio through the season, and an abundance of it is imparted at the critical period with corn.

If corn be planted in hills, we think three feet quite a sufficient distance in well prepared fields; but our success has been greater when the planting has been in drills, the rows three feet apart, and the kernels in the rows about nine inches. It is attended with some difficulty to reconcile laborers to this method of cultivation, but after a few days it will become easy, and they will take only a little more time in dressing an acre than they would in hills. And the product will be greater both in corn and fodder.

At the first hoeing we pass a plough as near the left hand row as possible, without disturbing the plants, turning the mould from the corn; returning we pass it in the same manner by the next row, forming a ridge between every two rows as high as the plough will make. This the laborers leave undisturbed, their business is to destroy weeds that have sprung up, and loosen the mould round the spires of corn. At the subsequent hoeings the cultivator is used, and in passing twice it effectually levels the ridge between the rows; the hoe is used as at first, only to pulverize the earth near the corn. We are careful in the selections of the most perfectly matured corn for seed, and prefer taking from the most fruitful spires.

In the management of the corn crop the last of the season, we have established no uniform practice; in seasons of drought we sometimes take top stalks to feed the stock; when threatened with early autumnal frosts, we cut at the ground and stock the corn. We think it best when there is a fair prospect of favorable weather, to leave the crop in an unmutilated state to ripen in the field.

M. A.

Feb. 27, 1840. [*New England Farmer.*

POULTRY MANAGEMENT.

Roxbury, (Mass.) April 3, 1840.

To the Editor of the New England Farmer:

Dear Sir—In the last number of your valuable periodical, I noticed an article upon "Poultry Management," over the signature of Mr. Thomas P. Hunt. Some of the suggestions contained therein are new, and (as the author has been kind enough to observe that "any farther remarks will be cheerfully made when requested,") I have taken the liberty of proposing a few inquiries on the subject, most of which have been elicited by the communication above referred to. By giving them a place in your journal you will very much oblige one interested in the subject.

1. Mr. Hunt says, "never let your roosters run together." In a large poultry-yard, how can it be avoided?

2. Should their "*animal* food" be cooked or given them raw? In what quantities, and how prepared?

3. What temperature is requisite to keep fowls "*warm*" in the cold season, and at the same time be healthy?

4. What degree of heat is required to raise chickens successfully, in "a room warmed by a stove"?

5. What should be the size of the room say for 200 chicks hatched on the same day, and would so many do well together?

6. Would it not be well to put *one* old hen in the room at the time the chicks are placed there?

7. What should be the *furniture*, etc. of such a room, and how should it be arranged for the best advantage?

8. How soon after hatching should the chicks be taken away from the hens (to be raised in this manner,) and what disposal should be made of the mothers?

9. How long would it be well to confine the chicks in the room?

10. Why are not sugar-beets, carrots, ruta baga, or other roots, when boiled or steamed, good food for poultry?

11. How long does the "moulting season" continue?

12. Are the "Creole" fowls a native breed, and can they be obtained? What is their color and particular shape?

13. Where can the "Booby" fowls be purchased?

My stock consists of about two hundred, and the breeds are the Poland, Dorking, Surrey, and Malay, with a few Creepers and common fowls. To the first named I give the preference.

Respectfully, T. W.

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We publish the above queries, and hope we may hear from our friend Hunt in reply. As he is now in Pennsylvania, this cannot be immediately expected. We regret that we cannot fully answer the questions of our correspondent at once.

In respect to the first question; we believe it would be impracticable, unless there are enclosures or yards which are completely fenced and secured from intrusion.

2. To the second question, their food may be given them either in a raw or cooked state. It is generally preferred in a raw state. The amount cannot be prescribed, but they may be fed with liver or coarse pieces of meat occasionally. Some animal food is indispensable to their health.

3. Artificial heat can only be necessary in intense cold. Let the hen-house be faced to the south, and thoroughly closed at the back side; let it be glazed so as to admit the sun; let the entrances be near the ground, and in winter not numerous, and capable of being closed at night, and the roosting places so as they can sit together; and they will be comfortable enough.

4. After the first few days 45 to 50 deg. will be warm enough.

5. 20 ft. by 30 ft. and 15 ft. in height would be ample. The floor should be the ground; and cleanliness is highly important; so also is fresh air.

6. It is not necessary. A celebrated poulterer near London, had some statues of hens made of wood, with their wings and bodies covered with flannel or woolen, under which the chickens nestled. These are said to have answered very well.

7. If for chickens exclusively, nothing but roosting places and inclined steps to reach them are needed, with the wooden mothers above referred to, and a watering tub. If for a poultry house, to which ingress and egress may be free, boxes to lay in, and poles upon which to roost.

8. The mothers will dispose of themselves. The chickens may be taken away at a week old, if due provision is made for their comfort. Excepting in cold weather, an open yard is much preferable for them to range in at pleasure than confinement in a covered building.

9. According to your discretion.

10. Do not know of their having been tried—but probably not comparable to potatoes.

11. Two to three months in autumn.

12. Cannot answer. The best fowls for the production of eggs which have come within our knowledge are the Sicilian; a dark colored, full sized fowl, with a towering plume.

13. Know boobies enough, but not of the feathered tribe. A friend has told us that he found at Head's table in Philadelphia on one occasion a pair of fowls weighing 17 pounds, and that Mr. Head said that they were common in that market. These we should think were the "Great Boobies." They were probably originally from Calcutta. We have had of this kind, which we suppose may be the Malay, referred to by our correspondent. The roosters of this tribe must not be placed with our common fowls.

We are inclined to believe that the Poland hen is the same with the Sicilian.

We trust our friend Hunt will answer in due season, and with all fit learning and experience. We throw out these hints merely as an apology for an answer.

H. C.

[*New England Farmer.*

CROP OF CORN-STALKS.

PERMIT me to mention an experiment made by myself at Washington, on the subject of fodder.—Noticing the statement made in the French periodicals, that the stalks of corn (maize) contained one half as much saccharine matter as cane, and knowing that my ancestors made their molasses during the revolutionary war from these stalks, I sowed four and a half bushel of common corn, broad-cast and harrowed in the same. This labor was easily performed by a single man with a team (including the ploughing) in a day. Having soaked the corn in saltpetre water, it took a rapid start, over-topped the weeds, and covered the ground with a forest of stalks. When fairly tasselled, I cut the same, which I fed to cattle, horses and hogs, both green and dry. If fed to swine after being cured, it was cut and fermented with chop or bran. Being anxious to ascertain the quantity, I measured a few square feet of the stoutest. I found I had 5 lbs. of green fodder per square foot; this may not seem incredible, and it is probably less than what would grow in rich lands at the West; if, however, we consider there are 43,560 square feet in an acre, we shall obtain 217,800 lbs, eqaul to 108½ tons of green fodder!

I cut the first crop the early part of July, and ploughed and sowed the same land again, and took a second crop two thirds as large, and even tried a third on the same land, but it did not reach over ten inches before the frost seized it. Persons who have only a small patch of ground may try this experiment to advantage, and fill their barns with fodder.

In curing stalks, it is recommended to place the small end upon the ground, with the butts upward, to guard against the absorption of moisture from the wet ground. Whoever will try the experiment of cutting flowers, and putting some on damp flannel, or

into water, and hanging up others in the sun, will see the advantage of curing fodder in the way I have mentioned. Should any fear the stalks would not stand upon the small end, a few rows could be left to support the remainder. [*Hon. H. L. Ellsworth.*

NOTES FROM MY DIARY.

BY C. N. BEMENT.

I have kept a "diary" or journal of the "doings" on my farm for the last six years, wherein every thing of importance relating thereto is carefully noted; and more particularly wherein experiments are tried, as without my notes they would be of little use. It is the detail and correctness that give to experiments, whether favorable or unfavorable, their intrinsic value. Should the following meet approbation, I may occasionally furnish others.

Germination of Seeds.—In order to hasten germination, I soak my mangel wurtzel and beet seeds in hot water, and keep them warm for four or five days previous to depositing them in the ground, then draw off the water, and to make them sow easier, I have generally sprinkled and rolled them in plaster of Paris. One year I tried on a part, lime in powder, and to my surprise, that part which was limed, came up some days earlier than that rolled in plaster, and that which was rolled in plaster came up a few days before that which was only soaked. The former kept the lead in color, size, and luxuriant growth, throughout the season.

In 1840, after soaking the seeds of my sugar beets in warm water four days, and draining off the water, I rolled a part in air slacked lime in powder; which, besides furnishing an alkali, has a great affinity for carbonic acid, and which appears to be necessary to be extracted from the starch before it can be made soluble, and which produces heat by concentration of the oxygen and carbon when being extracted. After the seeds were thoroughly dampened and drained, I sprinkled them with the powder of lime, and kept them damp by the use of a small watering pot, for five or six days; at the end of which time they had become plump, and when deposited in the ground they were not long in pushing through their seed leaves, healthy, upright, and dark green in color, and the plant healthy and vigorous. The reasons why I preferred lime were, its cheapness, and the affinity of quick lime for carbonic acid. As to its alkaline properties, soda would probably be much more powerful, but lime seemed to be the more powerful, and that which had produced the most effect in the experiments of M. Poyen and others, in reference to the same matter. The seed was kept damp until sown, as the dry powder would be apt to injure the vitality; and seeds do not suit well to have their dormant powers brought into action without being sustained, for if far

advanced and severely checked, such a course might destroy life altogether.

My attention was first drawn to this subject in 1837, by one of my neighbors, who tried the experiment on his corn and potatoes with singular success. His field of corn was noticed by every one who passed it, as being of a much darker color, and maintaining a much more healthy appearance than any other crop in the neighborhood; and his crop was better, and the grain superior to that of his neighbors. It will be recollected that the year 1837 was a very unpropitious season for corn. He applied it in the hill, where the seed was planted. It is to seeds containing albumen, principally in the form of starch, that it will be of most benefit. Hence the propriety of rolling wheat in lime before sowing it.

For the last two years I have been in the practice of using a composition for my corn, which I have found very beneficial. I applied as soon as the plants appeared above ground, and again after the first hoeing. It consisted of one part slacked lime, one part of ashes, and one part of plaster, well mixed together, and applied the same as plaster on the hill. Since using this composition I have never been troubled with the grub or cut-worm; and even the crows have not thought proper to trouble me.

Albany, Jan., 1842. [*Northern Light:*

AN EXPERIMENT.

Mr. Editor,—The details of an experiment which I tried last spring, assisted by a little imagination, and a good flow of mother English, would make an amusing *tale*. But as I possess neither, I shall attempt nothing but a statement of *facts*. And, perhaps, if the hint is acted upon, it may be beneficial to both the Farmer and the *Printer*.

Owing to causes which I could not control, and contrary to my wishes and general practice, I had to plant a piece of new ground as we farmers call it, so late in the season, that on the Corn coming up, there was no other near to divide the attention of the crows and other birds. The Corn, as will be the case, in land that is not well cleared of the litter, and covered with the plough, came up very irregular, which enabled the birds to take it nearly as fast as it came up, that is, on two sides of the field, which were bordered by old field pines. I went round the field some two or three times a day, to afford what protection I could to the young Corn, but, at the end of about two weeks from the time the Corn first began to come up, so great was the havoc on about one fourth of the field, and the stalks stood so "few and far between," that I was minded to plough that portion up. As the season was growing late, and the Corn now left, was too far advanced for the "varmints" to pull up, and thinking of the proverb, "a bird in the hand is worth two

in a bush,"! finally concluded to go over it with hoes, and have clean earth put on the Corn, with the view of having it to come up as much alike as possible. The replant soon began to come up, and I again commenced my rounds; but all to very little purpose, for the field being large, while I would be in one place, the birds —red-birds, doves, crows, &c., would pounce down somewhere else and go to work.

Well, it was early in June, as the story writers have it; I remember it well, it was Friday, and the meridian sun beamed forth in all his glory, but his power was somewhat tempered by a brisk and refreshing westerly breeze; I was perplexed and discouraged; I hied me home, resolving to try stratagem, if I could hit upon any thing of quick application, that promised success. I lay me down upon a bench, flat on my back, as is my custom when perplexed, and undecided as to a measure, with my arm over my eyes, and there tried to think of all the plans that I had ever seen, or heard of being tried in such cases. I thought of soaking the seed Corn in tar, but that was out of season; I thought of boards cut into various comic figures, painted, and hung up, to be agitated by the wind; I thought of new tin reflecting the sun's rays, &c.; but all these plans required some delay, and my case was urgent, I was about to give it up, when raising my head my eye rested upon a desk, wherein was deposited all the newspapers I had received for years. The idea struck me—ha! Mr. Editor do you smell it now? yes, the idea struck me to use these papers in frightening the birds from my field. Well, I gathered an armful of the papers, without regard to religion or politics; excluding from the honor, only such as by their form, were not suited to such an enterprize, I also pocketed a gross of small tacks, and "put out." By the way, I cut with my pocket knife, a quantity of small poles, six or eight feet long, leaving a horizontal branch at the top, or if that was wanting, I bent the top square to one side, so that the papers might hang perpendicular and square, the better to resist the action of wind and water. Thus equipped, I arrived at the field. Before proceeding further, I will state how I confined the papers to the stakes: I doubled the paper near the edge, a time or two, to give sufficient consistency for the tacks to hold it firm to the wood; I then laid the edge along on the branch left for its reception, and confined it with three or four tacks. I was particular in putting them up, for the paper to hang square. In this way they all survived the influence of the weather, until long after they were necessary for the protection of the Corn. And now for the result: I am writing *facts*, Mr. Editor, as I told you in the outset. But, I see that crow now as he darts through the air, as if—but not so so fast: when I arrived at the field, the wind was blowing brisk. The first paper I stuck up was an "American Baptist." As I stuck the pole in the ground, I heard a crow, the only one in the field, I believe, about 150 yards off. You know Mr. Editor, that

crows have a peculiar kind of bawl, when their nests are disturbed, or when they are attacking owls, &c.—and thus it gave notice: c-a-w,—and as the wind flapped the paper, he came out in broad and lengthened cadence, caw-aw-aw. Did you ever see a crow fired at by a keen rifle, and just missed, well, if you have, you may form some idea how he left the place; he uttered not another sound, but putting himself in complete trim, he darted through the air with almost the swiftness of an arrow, nor did I see any crows in that field from that time, until the Corn was out of danger, with one exception, and that was on a portion of the field where I obtained a good stand at the outset, and put no papers. I then proceeded to put up all my papers, without any incident worth relating, except terribly frightening a dove, with a "Philadelphia Saturday Courier," at which I would have given the honor of this discovery, to have had somebody to help me laugh. Mr. Editor, I suppose I might speculate a little as to the relative merits of the different papers, set up as scarecrows, but I will only say, so far as I now recollect, the "Temperance Advocate" looked modest; the "Edgefield Advertiser" appeared to have good will for the cause; the "Biblical Recorder" showed a war front; and the "Brother Jonathan" covered a large space. The *actual* merits of two others have already been mentioned; but to conclude, I replanted my Corn again; it was not molested, and I made a pretty good crop, though from its lateness, it was light. Farmers of Edgefield, take good papers, read them, and if you have occasion use them as scarecrows.

J. of R.

[*Plough Boy.*

OAT HAY.

Mr. Editor,—It has long been known that the oat crop, when thickly sown on a highly manured soil, forms one of the most valuable green crops for soiling all kinds of cattle as well as horses, coming off in time for the land to be sown with turnips, beets or buckwheat, or even to be planted to potatoes, leaving the soil perfectly clean and in the most suitable order for these crops; but it appears from a late account, that the same crop when cut green, has been made into hay of the finest quality, the quantity also being very great. I here present you with the particulars of an experiment made by W. Stewart, Esq., Peebleshire, Scotland, for insertion in your valuable pages. He says:

"Having a field of 14 acres which had been partially furrow-drained, and from which a crop of oats had been taken to prepare for a green crop; finding there were about four acres which required complete draining, and that it would be the better for extra working I determined to sow it with oats for the purpose of making them into hay; and this I did on the 11th day of March, sowing 26

bushels of seed on the four acres, without manure. So soon as the flower was a week out of the shot-blade, on the 27th of July I began mowing them; the crop was put into a temporary stack on the 7th of August, and after a few days it was carted to the barn-yard and put into the ricks of three or four cart-loads each, for the convenience of leading into the hay loft. The produce of the four acres was 15,224 pounds of hay. The horses prefer this fodder to every other kind of hay and I have now before me my farm-steward's letter, saying, 'The horses getting common oat fodder are in tolerable condition, but those getting oat hay and eating the same quantity of oats and doing the same work, are as fat as they can be.' Annexed is a statement of the expense of the oat-hay experiment:

Cost of 26 bushels oats for seed,	£4	6	8
Work on the land,	1	16	0
Mowing, four days,	1	1	0
Making hay from 27th July to 7th Aug.,	0	18	6
Carting and stacking,	0	13	6
	£8	15	8
692 stones hay—22 lbs.—at 6d.,	17	6	0
Leaving a clear profit of	£8	12	4

independent of the manure."

Now, sir I think your readers will agree with me in considering this one of the most curious and interesting statements that have ever found their way to this country; and if it does not go far to bear out the reasoning of your correspondent *Vir*, in your last number on "American farming," I must have read that article to little purpose to be so mistaken. But what must we think of sowing six bushels and a half of seed oats per acre? It would not be easy to persuade many, that *any* return can repay such an outlay, *any* how! And then the mowers, being four days cutting four acres of green oats, at an expense, for this work alone, of five dollars, and a farther expense of nearly as much for *eleven* days drying and preparing and putting into temporary stacks, to be pulled to pieces in a few days and taken to the barn yards, there to be re-erected in larger stacks, preparatory and convenient for a final removal to the hay-loft at an expense of three dollars more. Say, therefore, for mowing, making and carrying four acres of oats, thirteen dollars! And if to this be added the cost of seed and the labor of working the land, (the last item alone being about nine dollars,) we must be astonished to find that even then there remains a profit amounting, manure included, to more than the whole expense, valuing the hay at about one half cent per pound. After this, I do not hesitate to put the difference between an American and a Scoth climate to a "whole rent," and if eleven days spent in drying a crop of hay, sufficient only for carrying into temporary stacks, be not enough to confirm us of this fact, I know not what

more we can expect to receive in the way of evidence. As is said by our correspondent, here is proof positive that neither the cradle-scythe nor the horse-rake are yet known there; and in a climate so humid, as to require eleven days to dry a crop only partially, and so uncertain as to require that that crop shall be put into two separate fixings before it reaches the hay-loft, lest the rain should be down upon it, and spoil all, no hope must ever be entertained of getting off the grain crop in time for a second crop of turnips, beets, or buckwheat, or of raising corn at all; while, judging from the account before us, the difference in the expenses in securing a general crop, and the difficulty and uncertainty arising from so late a period of harvest, must, indeed, warrant "Vir's" statement, that "the forwardness of the seasons here, by which the farmer is enabled to secure his crops, both hay and grain, so early as July, during long days and fine weather, often performing the labor of two days in one, with the advantage of immediately recropping his land on the removal of his first crops for the use of himself and his out-door stock in the coming winter, with a moral certainty of obtaining a season of sufficient length to bring them to full maturity; and after that to enjoy sufficient space to winter-fallow every acre of unemployed land during the fine weather of autumn—all this is cheap at an extra rent." To be sure the Scotch are exempt from tythe and established church-rates, nominally so called, but the English calculate that they are paid in the shape of extra rent, and it is a fact that lands in Scotland are charged with very high rents.

With regard to the nutritive quality of oat hay, I presume there is no question that it is great, the saccharine properties being enhanced by sacrificing the crop of grain; but I should be inclined to allow it to stand a little longer, so as to give time for the grain to form, but not to ripen; it might require judgment to fix the exact period, but there would be no difficulty about it. To cut such hay into chaff, must be by far the best mode of expending it, and it is reasonable to suppose that such fodder would be particularly sweet and suitable for milk cows in winter, especially when given with sugar-beets, which also might be raised in this country as a second crop of the greatest luxuriance. I tell you, Mr. Editor, *no one* knows the blessings of such a climate—in other countries it is of course unknown, while here, we are so accustomed to it as to be unable, properly to appreciate its advantages. A. RANKIN.

Perhaps our correspondent is not aware that the Scotch acre is one-fifth larger than the English acre—say, therefore, four Scotch acres are equal to five acres English.—*Ed. Cabinet.*

☞ What is here called oat hay, is common in the eastern part of Massachusetts. We often cut our oats when fairly in the milk, and feed them out to stock unthrashed. They are considered worth about as much per ton as good timothy or herdsgrass.—*Ed. N. E F.*

[*Farmer's Cabinet.*

RULE FOR MEASURING CORN IN THE EAR.

THE following is a correct and speedy method of measuring corn, a knowledge of which will be advantageous to many of our readers.

Rule.—Leave the corn in the pen or crib, so that it will be of equal depth throughout; then ascertain the length, breadth and depth of the crib or pen: multiply these dimensions together, and their product by $4\frac{1}{2}$. Then cut off one figure from the right of the last product, and the remainder will be so many bushels of shelled corn; and the figure cut off the decimal of a bushel.

Example.—In a crib or pen of corn in the ear, measuring 10 feet long, 8 feet high, and 7 feet wide, there will be 252 bushels of shelled corn.

Thus, $10 \times 8 \times 7 \times 4\frac{1}{2} = 252.0$

Yours, M. L. THOMPSON.

FARM ACCOUNTS.

THE Dutch, celebrated as well for their prudence as their thrift, have a maxim, that "no one is ever ruined who keeps good accounts." The maxim is so generally revered, that we find the manufacturer, the merchant, and the lawyer generally adhering to its suggestions, and keeping accurate accounts of their receipts and expenditures. Those in these employments who do fail, either neglect the precaution, or are reckless of the consequences of failure; for if they are conscious, as all should be, that they live within their income, a failure will seldom occur. The rule applies with equal force to the farmer. If he keeps an accurate account of his receipts and expenditures, he knows what are his resources—what are the profit or loss of his business—at the close of every year—he can graduate his family and other expenses accordingly, and if he cannot command success, he can merit it, by a course of industry and economy, which will never fail to secure him friends in time of need.

By keeping accounts, the farmer is able to ascertain the adaptation of his farm to particular crops, or kinds of stock; to determine upon the relative advantages of each, and to vary them according to circumstances. The keeping of accounts has a moral effect. It prevents procrastination, the "thief of time." The very consciousness that a man has to make entrances of every thing that he does, keeps his attention alive as to what he is to do; and the act of making those entries is the best possible training to produce active and pains-taking habits.

Keeping farm accounts is an incumbent duty to our children. It teaches them business habits—makes them acquainted with the nature and value of property, of various kinds—inculcates lessons

of industry and prudence—and gives a value and a zest to the comforts and pleasures which are the reward of their personal care and industry.

We have met with no form which we deem suited to the condition of our farmers. But of such high importance do we consider the keeping of farm accounts, that we venture to recommend a model, sensible, however, in its imperfections, and would respectfully beg of gentlemen more compatent than ourselves in the matter, to favor us with a better plan.

We will take for our illustration, a farm of 100 acres. Of this, a diagram or map is to be made, each sub-division numbered, and its contents, in acres, noted. The objects of keeping a journal may be one or all of the following:

1. To ascertain the nett annual profits of the entire farm;
2. The profits of each crop, or field, or course of crops;
3. The profits of each species, or of the entire farm stock, and
4. The expenditures and income of the family.

The farm is charged with all expenditures made for its improvement and culture, including stock, labor, board, dung, taxes, new implements, interest on its estimated value, ten per cent. for wear and tear on old implements and tools. And it may, in like manner, be credited with all its annual products, whether sold or consumed in the family; and with the increased value of its stock, improvements, &c.

If it is desired to know the profits of a field for a single year, or during a course of crops, the labor, dung, seed, &c., expended upon it, should be charged to it; and it should be credited with the products, whether grain, grass or pasture.

Where it is desired to know the profits upon stock generally, or upon a peculiar kind of grain, this head may be charged with purchases and keep, and credited by sales of animals, increased value and products, as butter, cheese, wool, &c., sold or consumed in the family.

The fourth object is one of interest to every prudent manager, who would observe the golden rule, *to live within his income.* A knowledge of one's actual income, and of the expenditures of his family are essential in every well-ordered household. The family account should exhibit the total expenditures of the family, whether for food, clothing, pleasure, furniture, schooling, &c. and the labor of the famtly upon the farm, and the board of the workmen, and interest and dividends upon vested capital.

All these matters may be entered in a diary or journal, in a few minutes each day, and at the end of the year, posted under the four leading heads of *Farm*, *Crops*, *Stock* and *Family*, or the secood and third may be subdivided into single fields, and for the different kinds of stock. The footings will show the relative profits or loss under each head. Where the account is posted to the fields separately, the relative advantages of the different courses,

may be determined at the termination of the course. Minute details are not required. The total expense of putting in a crop may be comprised in one charge, harvesting and housing in another, and threshing and marketing in a third. The value of a total product of a field may also form one entry. The object is to enable the proprietor to come to some pretty accurate result.

We give the following as the forms of books which we have adopted. A quire of paper may be ruled to this or any other form by the farmer himself, and may be covered and stitched by the wife.

FORM OF A FARM JOURNAL.

1837,	No. 1, Dr.	To 40 loads manure, at 8s. - -	$40	00
May 15.	Stock, Cr.	By 10 lambs sold, at 12s. - -	15	00
	Family, Dr.	To 20 b. wh't, at 20 $2 p. b. - -	40	00
	Farm, Dr.	To cash paid J. B. for 8 mo. labor, at $12.	96	00
Dec. 1.	No. 1, Cr	By 200 bushels corn, sold at $1—stalks $15,	215	00
	Stock, Dr.	To summer keep of 12 cows, at 8s. per mo. 7 months, - - - - -	84	00
	Family, Cr.	By by board of 4 laborers 6 months at $2 per week, - - - - -	208	00
	Farm, Cr.	By val. of wh't fm. fld. no. 2, -	304	00

FORM OF A FARM LEDGER.

Dr.		*Farm.*					*Cr.*	
fo 30	To cash to A B for 6 mo. la.	$72	00	fo 12	By 5 t. hay sold at $20	$100	00
32	To 2 tons plaster. at $6,	12	00	15	By 500 lbs. wool, sold at 50 cents. -	250	00
36	To an iron plough, -	25	30				
40	Cash paid for 20 sheep,	60	00	18	By profits on wheat, No. 2, - -	76	00
46	To loss on c'r crop, in No. 6	12	75				
47	To taxes on farm, -	7	25	20	Profits on Ruta Baga, No. 6, -	134	00
				31	By increase in val. of stock, - - -	150	00
					By cash for 6 c's. sold,	140	00

The above forms will serve to explain our views, and may be altered or improved to suit the taste or business of each individual.

[*Buel.*

TREATMENT OF THE HORSE.

[CONCLUDED FROM PAGE 89.]

ALL the general directions for the treatment of horses in England will suit quite as well for the horses of our own country. But the articles of food being somewhat different with us, I will now add a few remarks on that subject. In most of our States, the chief food for horses is Indian corn and the fodder thereof. Both are usually fed away in the most careless, extravagant, and wasteful manner—the corn being given in the ears, and the fodder in bundles, which are thrown untied into the horse-racks or on the ground. Much, then, is wasted by being trampled under foot, and so dirtied that the horse rejects it, whilst many of the grains of corn pass

through his body undigested, and of course, render him no service whatever. He also loses all the benefit of the cobs, which he rarely eats when whole, although they make an excellent food, if ground up with the grain. This mode of feeding is much the most general, notwithstanding it has been indisputably proved by actual and numerous experiments, that to give the corn and cob ground together, which is called *cob-hominy*, and the fodder chopped in a cutting box, not only saves more than enough to pay the extra expenses of grinding and cutting, but actually keeps the horse in better condition than the same quantity of corn and fodder given in the usual way. Moreover, it is a cheaper food than any other of which grain, either whole or crushed, forms a part. Take oats for example, which are the most common, where corn is not used, and let us estimate the former at forty, and the latter at sixty cents a bushel, which I think a fair general average in the States wherein corn is a staple crop. Now as only half the cob-hominy is grain, the mixture will cost only thirty cents a bushel, and is generally deemed fully equal in nutritive qualities to a bushel of oats. If these also be crushed, we must add about four cents to their cost, and the difference between the two kinds of ground food, (the chopped fodder being the same in both cases,) will be about 14 cents per bushel, in favor of cob-hominy. Suppose then, that one gallon, three times a day, is enough, as experience has proved it to be, for an ordinary sized horse, with eighteen or twenty bundles of fodder, the saving in one week, by feeding with cob-hominy, will be a fraction over thirty-six cents, or nearly nineteen dollars a year for each horse, which is the annual interest of rather more than $315. Yet not one in a hundred of us ever think of saving it! Few southern and western men who are "*well off*," (as the saying is,) keep less than three or four horses that do not farm work, and this they do at an additional yearly expense, when oats and unchopped fodder are their food, of 57 dollars for three, and 75 dollars for four horses, rather than be at the small trouble of having their fodder chopped, and their ears of corn ground into cob-hominy. Ten or twelve poor children might be annually schooled for that sum. For horses that are often hard ridden and rapidly travelled, oats are generally deemed better than corn, as less heating; but a greater quantity of them must be given, in the proportion of about one and a half gallons of oats to one of corn at each feed. Under such usage, green food should never be given if avoidable. But when the horse can rest for a few days some may be allowed him, in small quantities, by way of medicine. Any kind of grass that a horse will eat, may answer the purpose, but lucerne and clover of the first cutting are deemed best—the second always salivates—an affect, by the way, for which no cause, I believe, has yet been discovered. Pre-supposing that a horse has a plenty of wholesome food, and proper grooming, if you would give him a finer coat than these alone can produce, let half a pint

of sound wheat or a small handful of brown sugar be mixed with his food, about once in every six or eight days, for a few weeks, and the object will be attained far better than by blanketing, which always makes him more liable to take cold, when exposed to bad weather, as he sometimes must necessarily be. On long journeys, in hot weather give your horse a double feed at night; in the morning travel 16 or 20 miles before you feed him again, then do it lightly and after he is perfectly cool. Give a few quarts of soft water both before and after his food, then resume your journey, and go 15 or 20 miles farther. This will enable you to stop early every evening, without any night riding, and will give both yourself and your horses a long rest to recruit your strength. If your horse be sound, you may thus travel him hundreds of miles without danger of his failing.

Farm horses may be kept in good order at much less expense; for they may be fed, *when unemployed*, upon any of the roots which it is customary to give them in England. In addition to these, we have the pumpkin and its varieties, all of which are good food for horses, but the seeds should always be taken out, as they are powerfully diuretic. If such food be at first rejected horses may soon be taught to eat it, by mixing a little salt with it, and offering them nothing else for a few days. To this should be added, as soon as they will eat such a mixture, from thirty to forty pounds of chopped provender, for every twenty-four hours, and this may be made either of well cured corn tops, blades, hay, wheat, oats, or rye straw, or chaff. Corn shucks, (which is the southern name for the covering of the ears,) answer well to mix when chopped up, with the roots or pumpkins; if they are salted as they are put up and kept dry. Another very good long forage peculiar to our country, consists of the various kinds of Indian pea-vines. These make excellent for farm horses, if exposed to the sun until they are somewhat wilted, then stacked in alternate layers with the straw of either wheat, rye, or oats, and each layer sprinkled with salt, as they are stacked. Thus fed and protected from bad weather by warm shelters, open only to the south, and well covered with any kind of thatch, or corn tops or loose straw, farm horses may be kept healthy, and in good order throughout the Southern States, without their owners incurring the expense of wooden or brick stables for them. Stalls, however, should be made for them under the shelters, with divisions high and close enough to prevent their fighting, and in those they should be tied while eating. Their mangers or troughs should be wider and deeper, than when racks also are used although *they* never should be, or lazy hostlers will be sure to avail themselves of them, if not closely watched. When put to constant farm work, horses should have only dry food, three times a day. It may consist either of bran, shorts, cob-hominy, ground rye, oats, broom corn, or oats mixed with chopped stuff in the proportions already mentioned—that is, about thirty-five pounds

for horses of common size, and forty pounds for the largest. But after the grass is in plenty, and as long as it last, (if it does not salivate,) they may be turned out of nights and rest-days, although if your pastures are large, more time is lost every morning in catching them and getting ready for work, than would amply compensate, if spent in farm labor, for the expense of keeping them up, especially should you have any grass to give them a moderate quantity in lieu of a portion of their dry food. To fatten a horse rapidly, his fodder or hay should always be chopped and steamed, before it is mixed with the meal of either corn, oats, or rye, and as much should be given him, three times a day, as he will eat without leaving any. Give him also salt alone as often as he will eat it, and soft water at least thrice a day, but always with some meal of either of the above mentioned grains stirred up with it. A small quantity of ground Indian peas will add much to the nutritive properties of his food; and thus treated, with moderate daily exercise, in good weather, the process of fattening will soon be completed, provided the horse be in health at the commencement.

I fear that some of your readers perhaps, may deem the foregoing details relative to horses, more minute than they need be, and possibly may think me somewhat officious in giving them. But should they be disposed thus to condemn me, I must beg them to recollect before they pass sentence, that all I have written on the subject has been communicated at the request of yourselves and one of your correspondents. It is true that this request was made to your contributors *generally*, and therefore it was not *my special business* to comply with it. Still I have ventured to make the attempt, and should it bring me into any scrape, I hereby give you and your North-Carolina friend fair notice that I shall call upon you both lustily for help. If either of you should want farther information in regard to horses, let me strongly recommend to you "*The Horse Book*," for in addition to all that I have said, you will find a prescription for all their diseases, and directions for correcting every fault which can be corrected. [*Cultivator.*

THE TREATMENT OF SICK ANIMALS.

THERE are so many erroneous notions prevalent in the community, respecting injured or diseased domestic animals, and such unnatural and injurious practices as a consequence of these incorrect views, that no apology necessary for an attempt to subserve the cause and interest of these useful creatures who, if they had tongues to speak, would tell sad tales of the wrongs to which they have been, and still are, too often subjected.

We do not propose to give an essay on the particular cases that require attention—our object is rather, very briefly to ask the owners of domestic animals to be guided by a few correct principles

which are applicable to nearly all cases, and which will at least prevent our doing harm, where we are not able to effect much good.

In the first place, then, we would insist, that when an animal is well he never requires any medicine—and when he is sick, we would protest against his being dosed with articles that are said to be "good" for a particular disease, without any reference to its violence or the symptoms, as common sense would dictate; that remedies the most opposite in their character and effects, may be equally advantageous in different periods of a case.

Always distrust the man and the remedy, when your friend declares that an article is always "*good*" or a "*certain cure*" for a disease, without reference to its symptoms---prescribing for the name of the disease, rather than the disease itself—this is the very essence of quackery, in man or beast.

A large proportion of the diseases of animals closely resemble those of the human family, and require a treatment conducted upon the same general principles—with some variations and some peculiarities, it is true, but none of those outrageous departures from common sense, which are too frequently witnessed.

A horse with pleurisy, or inflammation of the lungs, or apoplexy, requires a widely different treatment from one with colic or with worms. There is no more mystery about the diseases of a horse, or an ox, than about those of a man, and a violation of natural laws is as productive of pain and injury in one as the other.

There is too great a propensity, everywhere, to resort to active treatment in all cases—a feeling that is encouraged by the ignorant or designing for selfish purposes. An adviser in sickness is often most useful, and shows most skill where he only tells what is to be avoided, and waits for indications for more active measures—doing little more than preventing ignorant but well-meaning persons from interfering with the salutary changes that may be going on.

Remember, that there is a restorative power in nature, to which it is always better to trust, than to direct active remedies without knowing for what particular purpose they are given.

There is never occasion for the administration of the disgusting combinations which the poor animal is made to swallow, from the mere whim of an ignorant horse or cow-doctor. Many a fine beast has been lost by his owner trusting to such prescriptions.

When your animal has fever, nature would dictate that all stimulating articles of diet or medicine should be avoided. Bleeding may be necessary to reduce the force of the circulation—purging, to remove irritating substances from the bowels—moist, light, and easily-digested food, that his weakened digestion may not be oppressed—cool drinks, to allay thirst, and to some extent, compensate for diminished secretions---rest and quiet, to prevent undue excitement in his system, and so on through the whole catalogue of diseases---but nothing to be done without reason. Carry out this principle, and you will probably do much good---hardly great

harm---go on any other, and your measures are more likely to be productive of injury than benefit. But as we have before said, our object now is not to speak of diseases in detail---it is rather to encourage our agricultural friends to *think* before they *act*; to have a reason that will bear examination for every step in the management of a sick or injured animal; to remember they have a powerful assistant in *nature* (if she is fairly used,) and that specifics, as they are called, are much fewer and less to be trusted than their proprietors would have us believe. We might, indeed, almost sum up what we would desire in one general direction of five words:---

TREAT YOUR BRUTES LIKE MEN. T.

[*Farmer's Cabinet.*

KEEPING OF COWS.

A writer in the Maine Farmer recommends that farmers should not keep too many cows, and cites a well attested instance in which *two* cows, by having the quantity of food given them as had been previously given to *four*, had yielded considerably more butter, cheese, &c. than had been before obtained from double the number --that is, that the *two* upon extra feed had produced more than *four*. We can believe this statement, and believe with the writer also, that farmers should not keep more cows, or stock of any kind, than they *can keep well*, both as to food and shelter. It should be as much the business of a farmer to grow a full supply of winter provender for his stock, as it is to furnish them with summer pasture; and yet how many there are, who never dream of such a thing as setting a field with clover, or any of the artificial grasses, relying altogether upon the precarious resource of their corn-fields to carry their stock through the winter and early spring months. Nor do many of them pay proper attention to saving the provender from those quarters.

CURING BACON.

Kill in the morning, and cut out as soon as cool, say in three of four hours, and salt immediately. To one thousand pounds of pork use eighty pounds of salt and one pound of saltpetre. Rub the skin well with the hand until it becomes moist, then pack the hams in a trough as close as possible. If the season is not unusually cold, five weeks is long enough to let it lay in brine. Then hang up and put smoke of good green hickory wood immediately under it, until it has enough. Take down by the first of March, and pack away in dry hickory ashes---being particular to rub well on the fleshy parts. Lay the meat as high in the smoke house as possible on boards or plank, and put corn cobs between to prevent it from touching.

[*Kentucky Farmer.*

HORTICULTURE.

THE KITCHEN GARDEN.

[We shall publish entire, the following small work on the Kitchen Garden, from the last London edition, containing as it does many valuable hints. The time of performing many of these operations, will differ from that which is proper on the sea-board, but will answer for the upper part of our State, and those places of the same latitude or elevation. We shall therefore make little or no alteration in our reprint. Where ever we may think it absolutely necessary, we shall do it in the form of *notes*. Those who have the last Volume of the Southern Agriculturist, will find the proper times for performing all gardening operations, by referring to them under their proper heads.—Ed. So. Ag.]

THE KITCHEN GARDEN:

A hand-book for Cultivators, containing full directions for the profitable culture of all kinds of culinary Vegetables. By James Main, A. L. S., author of "Flowers;" and "Fruit Trees."

Introductory Remarks.—The production of human food engrosses the care and requires the constant labor of a great majority of the human race. The farmer and grazier, the gardener and orchardist, are all occupied in this indispensable pursuit. Vegetable food constitutes the chief portion of human diet: and it is universally allowed that it is at once both nutritive and sanatory. On this account it is that culinary vegetables are so highly valued, and so extensively cultivated. The ancients, in all civilized countries, had their "gardens of herbs;" and no modern habitation, from the palace to the cottage, can be called complete unless it has a garden of pot-herbs as an appendage.

When the Almighty fiat came forth—"*Let the earth bring forth grass and herbs yielding seed, and the fruit tree yielding fruit after his kind,*"—man soon found from experience to detect the agreeable from the disagreeable, the wholesome from the poisonous species of both fruit and herbs. The most useful kinds naturally attracted especial notice, and in the course of time were gradually transferred from the original wilds to the fields and gardens of the patriarchs. Husbandry was necessarily one of the first employments of mankind, even during the pastoral reign; and from that age to this, every edible or otherwise useful plant became known, and the best were brought into cultivation.

The grape-vine among fruit-trees, and the cereals among herbs, as being the most important in that early state of society, were, no doubt, objects of especial care; and next, the pulse, roots and leaves, which could be used either dressed or undressed.

The cultivation of these last became in succeeding ages a business of itself, and at present forms one of the principal branches of gardening, which is intended to be specially treated of in the following pages, in such manner as not to be tediously diffuse on the one hand, nor uselessly brief on the other. To compile a compendium which may be generally useful, not only to those actually engaged in the business, but to those also who take pleasure in superintending, or in raising their own vegetables.

The different branches of the art are Arboriculture, Floriculture, Orcharding, and culinary Horticulture. The first embraces the raising and planting forest trees, for their timber, for shelter, or for ornament; the second is entirely for ornamental purposes; the third treats of the management of forest-trees and fruit-bearing herbs; and the last includes the various methods of cultivating all sorts of plants or parts of plants used in cookery, or as condiments to food; all effectuated by the operations hereafter to be described.

Besides the natural characteristics of plants, as trees, shrubs, and herbs, as to their duration as annuals, biennials, and perennials, botanists make other distinctions, as genera, species, varieties, and sub-varieties.

The first characters need no description, the titles being sufficiently obvious. As respects duration, annuals are those plants which, sown in spring, are fully developed in a few months, or at most within twelve months. But many culinary plants, though truly annuals in their natural state and climate, if hardy enough to bear the rigor of our winter, become, by being sown late in our summer, biennials; that is, they live over parts of two years, though not over twelve months. Of this peculiarity lettuce is an example: if sown in spring, it perfects its seed in the summer following; but if sown in autumn, it does not run to seed till the summer of the following year. Such plants are biennial by culture, not by nature.

Biennials are such plants as, if sown in the spring of one year, do not run to seed till the summer of the second year; such are the parsnip, the carrot, and many others.

Perennials are those which, being sown in one year, continue productive for many succeeding years, and having no assignable limit to their existence. Example, asparagus.

The botanical distinctions may be explained thus:—a genus is a family; species are individuals of that family; varieties are irregular progeny of a species, and sub-varieties are sports, or differing progeny of a variety. For instance, the common wild cabbage *(Brassica)* is the title of a family consisting of twenty-eight species; one of these is the turnip, of which there are several varieties, as the Dutch, the Norfolk, &c. Another species is the rape, of which there are two varieties, namely, the eatable and the oil-bearing; of the former variety, there are three sub-varieties, namely, the white, the yellow, and the black kinds of rape in cultivation.

The varieties and sub-varieties of culinary vegetables are much more numerous than the species, and are every year increasing. Accidental varieties frequently appear among all sorts of crops; and if such be singled out, the seed saved, and the offspring cultivated, an entirely new variety may be obtained. It is in this way that all new varieties are acquired and brought into cultivation. Much has been written on what constitutes a species, as distinct from varieties. It has been said that species only are perpetuated by seed, and that varieties, being a kind of mules, are not so increased; but experience proves the contrary. Cauliflower and broccoli, both varieties, are as readily reproduced by seed as is the mother species, the wild cabbage; this, therefore, is no rule. Another test has been proposed, namely, that distinct species do not hybridize with each other, but with their own varieties only; but neither is this an invariable rule.

Conveying the pollen of one variety to the stigma of another to procure an intermediate variety or cross between the two, is a practical expedient often had recourse to among florists; but it is equally practicable by the orchardist (as it has already been done in many instances), and the kitchen-gardener. There are many kitchen-garden vegetables, even our best varieties, which may be still farther improved by judicious crossing, and every gardener should constantly have this object in view. Accidental crossing is so frequent an occurrence, that the most careless seed-saver will never think of growing superior and inferior varieties near together, nor even kindred species. It is almost impossible to save pure seed of the early York cabbage in the neighborhood of Swedish, or any other turnip-seed saved at the same time; and so it happens among all other congenerous plants.

Among varieties of kitchen vegetables, some there are which come sooner to perfection, or to that state in which they may be used, than others. The first are called early, the last are late varieties. The first are chosen for the earliest crops; the next for the succeeding ones. This difference in the precocity of varieties is taken advantage of to prolong the season of their usefulness, as well as the different periods at which the seed is committed to the soil.

Other distinctions are given to plants, according as they are affected by the climate of Britain. Hence those which suffer from frost are said to be tender, and those that bear it unhurt are called hardy. A knowledge of all these matters constitutes the art of kitchen-gardening, as will be detailed in the following pages.

The success of gardening in general, particularly kitchen-gardening, depends chiefly on the qualities of the soil. A rich soil either by nature or culture is indispensable: for with a few exceptions, culinary vegetables are all what are called "gross feeders." A fine mellow loam, that is, earth, whose constituents are white sand and clay intimately mixed. This description of soil is easily

laboured; it is absorbent of moisture without becoming too much saturated therewith: constantly remaining of a uniform temperament; neither liable to be overdried by the draughts of summer, nor soddened by the rains of winter. It is easily penetrated by the roots of plants, by which they gain a firm hold of the staple: it seldom requires draining; but if it does, it is the first operation to be executed before the surface is laid into form.

As cropping exhausts a naturally rich soil, its fertility can only be maintained by frequent dressings of the richest manure, trenched or digged deeply in. If the soil be naturally poor, consisting of sand or sandy gravel, it should be improved by a thick coat of fresh loam to give it consistence; and liberal additions of dung, to get it into good heart to produce vegetables of a competent size and full perfection. If the soil be clayey, it requires much labor for several years, with applications of light materials either vegetable or mineral, before it can be brought to a kindly friable state for ordinary course of cultivation.

The quality of land affects the qualities of vegetables. On light warm soils vegetables are rather diminutive, but superior in flavor and tenderness; on heavy moist land they grow to a larger bulk, but are less palatable when dressed.

The aspect and situation of a dwelling house usually fixes the place of the kitchen-garden. It should not, however, be placed in a hollow, nor on the top of a hill. The best aspect is one facing to the south-eastward, and on a gentle declivity. The form, either a parallelogram or a square: the walks should be parallel with the walls or fences; leaving all the compartments whether borders or quarters in rectangular forms. This regularity makes cropping more conveniently and neatly executed, and gives an appearance of order to the whole.

A kitchen-garden should not be too much embosomed among trees; full and free air from every quarter is indispensable. A belt of lofty trees on the north side is often serviceable, so as they do not stand too near the walls.

Every kitchen-garden should have a frame-ground attached. It should be near the stables: and without, rather than within the walls; because the dung, straw, and heaps of compost usually collected in such a spot, has always an untidy appearance. A well and pump should also be in this portion of the garden; and likewise a shed for mushrooms, tools, and other things requiring to be kept dry.

A constant and regular succession of crops is a material point of a kitchen-gardener's duty. In most cases of open-air crops, is almost impossible to have enough, without having too much, and to this the manager must always pay attention. The periods of sowing must be well considered, together with the character of the situation, soil, and season. Shallow-rooting plants exhausts the surface, while deep-running roots extract most of their aliment from the subsoil: these should alternate with each other.

Vegetables which are cultivated for their leaves or flowers can scarcely be treated with too rich a soil, such as spinach and every variety of the cabbage tribe, and likewise all those whose roots are comestible; while those which are cultivated for their pods or seed, do better on inferior or poorer soil, this increasing the number and earliness of the pods, and preventing the plants from running too much to straw.

Plants are affected by all atmospheric influences. In dry seasons they are precocious and more diminutive: in wet seasons later and enlarged. A forward spring expedites every crop: and a late one brings at the beginning of summer, a glut of many things together, and deranges the order of succession intended by the manager.

Of the operations in Gardening.—The usual operations in gardening, are trenching, digging, ridging, pointing, hoeing, raking, earthing up, levelling, sowing, planting, weeding, pruning, training, and gathering and securing crops.

Trenching.—The object to be gained by trenching, is to open, and at the same time, deepen the staple, (that is the *cultivable* surface of the ground) in order that it may be sufficiently pervious to all atmospheric influences, and to give greater scope and facility to the extension of roots. It also, by reversing the order of the strata, mixes the soil and subsoil more intimately, and makes the whole staple more uniform in consistence and quality.

Trenching is usually performed by first taking out a trench two and a half feet wide and to any desired depth at one end of the piece or quarter to be trenched, and carrying or wheeling it in barrows to the other to fill up the last trench. The first trench thus opened is filled by the earth dug and shovelled out of the second. The second is filled by the third, and so on to the end. During the work, the top spit or spadeful of each trench is thrown to the bottom of the open one; and what is afterwards dug and shovelled out, is laid to form the new surface, which may be either made level, or in ridges, as the nature of the soil may require.

It sometimes happens that the surface spit being the richest and most ameliorated is in process of trenching kept on the surface instead of being turned into the bottom of the trenches. This is accomplished by removing not only the whole of the first trench to the farther end, but the top spit of the second also; when what remains in the second is turned into the first, and then the top spit of the third is taken to raise the first to the proper level. This method of trenching is only necessary where the subsoil is very inferior, or when the surface is most suitable for seeds or any shallow-rooting plants; but for the generality of kitchen-garden crops, and especially trees, it is injurious rather than otherwise.

Ground is usually trenched twenty inches, or two feet deep, though this must always depend on the depth of the staple or quality of the subsoil. If the latter be tenacious clay or pure gravel,

neither should be brought to the surface, but only opened as deeply as possible (that is the bottom of each trench,) with the mattock. The deeper the ground is moved the better it is for every kind of crop, and especially for trees.

Digging.—Digging is only a more superficial manner of trenching; one spit only of the surface being turned; and in such way as that the surface weeds, &c. are buried, and the soil brought up by the point of the spade is turned to the top; the whole being well broken and reduced by the spade as the work proceeds; this is called level digging. But where the soil is of a heavy or a clayey quality and requires amelioration by frost it is laid in ridges. For this purpose the surface is marked by line into parts, two and a half or three feet wide either across or lengthways of the quarter; which parts are dug alternately forwards and backwards over the whole; but instead of laying the broken ground level, it is laid in ridges to receive more of the action of the sun, air, and frost; and when the ground is wanted for sowing or planting it is levelled down with the spade. It is only heavy soils that require such treatment; light sandy or gravelly land is rather deteriorated than benefited by ridging, because the sun and air rob the ground of its riches as well as its moisture.

Another method of half digging is called pointing or turning in, which is had recourse to in wet weather to destroy a crop of small weeds when hoeing and raking are impracticable.

Hoeing—Is a very common operation of gardening, and is performed by tools called hoes, of which there are several kinds. They are used for cutting up weeds, thinning crops, or for breaking up and loosening a parched surface. Of the draw-hoe, there are three or four differing only in size; as the turnip-hoe, carrot-hoe, &c. With these the workman draws the surface towards him, cutting an inch or two deep; the weeds or supernumerary plants so cut are raked off or left to wither in the sun. The Dutch-hoe, otherwise called a Scuffler, is a thin blade of iron fixed to the end of a long crutch-like handle five or six feet long in operation; it is mostly pushed from the workman, and useful in hoeing shrubberies or borders which should not be trodden.

Raking.—A rake answers several purposes in gardening; it is used for covering small seeds sown on the surface; for smoothing the same, and freeing it from weeds and stones; for loosening a crusted surface; for filling in drills, or earthing up drilled crops; and for levelling walks and alleys.

Earthing up.—This operation is necessary to all plants that produce roots from their stems above the first or seminal roots, as the cabbage tribe; or which form tubers under ground, as the potato; or that are liable to damage from wind, as peas, &c. Earthing up is also necessary for blanching various plants as celery, cardoons, &c.

Sowing.—This is performed either by broad-cast, or in drills. Broad-cast is sprinkling the seed irregularly over the prepared

surface, thicker or thinner according to the size of the plant, or whether on a spot from which the seedlings are to be transplanted, or to stand till they arrive at perfection. When the ground is sown it is trodden with the feet to bed the seed, and then raked smooth. It is the smaller seeds which are commonly sown broadcast, though all, whatever their size, may be drilled; and particularly the large sorts, such as peas, &c. The depth at which seed should be buried, is regulated by their size; the smallest require very slight covering; while the largest, such as garden beans, should be deposited two inches below the surface. To accomplish this, drills are opened by the draw hoe, or the seeds are let in singly in holes made by a blunt dibber.

Planting and transplanting.—When large seeds, bulbs, or the sets of tubers are placed in the ground, they are said to be planted; but in removing living plants from one place to another they are said to be transplanted. The first are put where they are intended to remain, as beans, potatoes, &c., the second are seedlings removed to a nursery bed, as a temporary station, or to the open ground where they are to stand for good. The particulars to be observed in removing plants are—that it be done at the proper season; that they be raised with care that the roots be not unnecessarily damaged; that the new place be in a proper state to receive them; that they are put in at the due depth and distances apart, and that they may be immediately watered if necessary.

Weeding.—Crops during growth require to be kept free from weeds, which, even in the best kept gardens, spontaneously spring up among them. All wild or worthless plants, or such as are out of their proper place, are accounted weeds; and are destroyed either by being pulled up by the hand, or cut over by the hoe, or turned down by the spade.

Pruning—Is a very important part of the management of fruit trees and shrubs; and it is also bestowed on some sorts of herbs. Its use is to divest the plant of all dead and superfluous branches; in order to direct the vigor to the more fertile parts, and at the same time to give the proper or desired form. Training is usually united with pruning; and consists in supporting plants against walls, rails, or stakes, in order to give convenient forms, security against wind, and extent of fruitful branches.

(To be continued.)

ON THE CULTIVATION OF ASPARAGUS.

By SAMUEL POND, of Cambridgeport.

We recommend to our readers the following communication of Mr. Pond, which we are happy to give a place in the Register, as we think his remarks are well calculated to benefit those who are desirous of forming new Asparagus beds, or renewing old ones.

While some horticulturist give their attention to one production, and make improvement in that particular branch of culture, the interest or fancy of another person leads him to something of a different description. Mr. Pond has given his attention in a particular manner to the culture of Asparagus, and from the success which has attended his efforts, if we may judge from the productions he has presented to the public from time to time, and which we ourselves have witnessed, should infer that he has been eminently successful in the cultivation of this delicious vegetable.

[*Ed. Horticultural Register.*

The cultivation of asparagus, although so general, is, by no means, as well understood as it should be. Like many other vegetables, which have for years been cultivated, and which almost every gardener thinks he already raises to perfection, and needs no further information in relation to their growth, it can still be wonderfully improved in its mode of cultivation. The immense quantity which is produced in this vicinity, for the market, and its superiority to that of former years, is a convincing proof, that its cultivation is now much better understood than heretofore, and it is to be hoped that it will still continue to be grown of larger size, and more excellent quality. In private gardens, in particular some fine specimens have been produced within the last two or three years, and, with little more care and expense, the market gardener may as easily supply his customers with this estimable vegetable in equal perfection. There are several kinds of asparagus some of which have been lately introduced, and have not yet become very well known. That which I have grown, and which I have proved to be of most excellent quality, as well as of monstrous size, is called the giant asparagus. It is as yet but little known, and consequently, not very extensively cultivated. But so superior is it to the old kinds generally grown, and of which hundreds of plantations now exist, that it must take their place soon. Some cultivators do not like to destroy fruitful beds because the kind is rather inferior; yet I have no doubt but they would be more amply repaid in the end, if they were to make new plantations, and as soon as they came into bearing, entirely destroy the old ones. Its large size and fine appearance together with its tenderness and flavor, recommend it to the notice of every market gardener, who is desirous of any emulation for his productions, and to every gentleman and amateur, who is ambitious of supplying his table with the most excellent kind. There has been considerable written upon the culture of asparagus, and there are various opinions respecting the best method of cultivation. But leaving the reader to choose which system he pleases, I proceed to detail the method I have adopted, and which I have found to be completely successful. It is difficult to persuade those who have for years continued to grow any kind of plants to tolerable perfection to adopt new

modes, with the hopes of improving upon the long-trodden path. In the month of April or May, select a spot of ground sufficiently large to plant the number of roots intended. If the plantation is to be large, and intended for supplying the market, the ground should be ploughed to a good depth; if for a common kitchen garden it should be trenched to the depth of fourteen inches. Make the surface of the bed level, after this operation is performed, then proceed to mark places to dig the trenches for the roots; they should be two and a half feet apart; stretch a line the whole length of the bed: draw the next two and a half from this, and so on to the whole width. Then proceed to throw out the soil twelve inches wide and twelve inches deep, laying it up in ridges between each trench; after this is done, throw in three or four inches of manure, level the same, and add about one inch of soil on the surface scraped from the sides of the trenches; level this also, and all is ready for planting. There are different opinions respecting the age at which roots should be planted; some gardeners prefer one year old roots, some two, and some even three, when it is desired to have beds ready for cutting as soon as possible set out; but I am doubtful whether much if any thing is gained by this; for my own planting, I always prefer those of two years of age, and rather than set out older ones, I would have those of only one year; select such only as have good fibres and a fine bold crown. In setting out, place them six inches apart, and lay out the fibres in regular order, and not tumble them together, as is too often done to the great injury of the plants. Much of their future success I attribute to the care given in setting out. When all are planted, cover them with about an inch of soil, and the work is all finished. The plants throughout the summer must be kept clear of weeds and occasionally hoed, and by these operations and the summer rains, the trenches will by October be filled up as level as the bed was before setting out the roots. The practice adopted by most, if not all growers of this vegetable, is to set out the plants in deep trenches, and cover them at once six or eight, and in some instances twelve inches deep. Nothing can be more injurious than this; for a great part of the roots seldom make shoots strong enough to force their way through this depth of soil, and consequently perish, or, if they come up they are weak and small, and never afterwards attain to any size. It is an old system, and, like that of growing celery, now generally exploded, it should be likewise. In the method I have adopted, the roots have but a slight covering of earth when planted, and the young shoots come forward very fast; as they increase in vigor little more is added, till, by the assistance of the heavy summer rains which wash the soil from the ridges into the trenches they are completely covered. Scarcely a root has ever failed to grow. Upon the approach of cold weather, and after the tops have been killed by frost, they should be cut down even with the ground and carried off: the bed should then be covered with

two or three inches of horse manure, which should remain on until spring, when it must be forked into the surface of the bed.

In doing this be careful not to injure the crowns of the roots. Just before the shoots make their appearance, give the bed a good raking which will destroy the weeds that are starting to grow. It is a bad practice to plant asparagus beds with radishes, lettuces, peppergrass, &c., as they exhaust the goodness of the soil. The first year after planting, a few of the strongest shoots may be cut, but very sparingly, as the roots will be all the better afterwards. Continue to pursue the same system of culture every year, and the roots will rapidly increase in vigor. The soil that asparagus seems most to delight in, is a light and rich one, neither too wet nor too dry; when the soil is shallow the trenches must not be dug so deep as above recommended. The manure I made use of was fresh from the hog-pen, and somewhat strawy; but I presume any good manure would answer equally as well. The asparagus is a marine plant, and a light dressing of marsh mud in the fall or spring seems to increase the growth of the plants. I would recommend it when it can be easily obtained. But prepared in this manner, and yearly attended to, will last for a great length of time, and the produce will be of superior quality. When I planted out my bed I preferred plants of one year's growth to older ones; they can be set out with more care, for this kind will, when spread on the bottom of the trench, require the trench to be from ten to twelve inches wide on the bottom, so as to spread your roots each way; I have seen beds set of three year old plants, from which enough could not be obtained to pay the setting out. When the roots are so large, it is impossible to set them out; even if they were so good, the old roots decay, and fibres start anew. In the following spring after setting my bed of plants of one year old, I cut grass of a good size; since then I have frequently had six spears of the common length, which would weigh one pound.

SAMUEL POND.

Cambridgeport, Dec. 25th, 1837.

FLORICULTURE.

PERENNIAL BORDER FLOWERS.

ANY of the hardy fibrous-rooted flowers may be grown in the parterre or the border in the same way as already directed for annuals, with which indeed they may be mixed so as to supply vacancies during particular months. Few annuals, unless sown the preceding autumn, or forwarded on heat in the spring, can be

brought to flower before June, and hence without early flowering perennials the flower-garden would exhibit nothing but a blank in spring and the first part of summer. Bulbs and corns indeed are the most numerous of our early blowing flowers; but there are also not a few with fibrous roots which come into blow before any annuals have shown flower: such as several species of *Viola*, *Primula*, *Tussilago*, *Adonis*, *Phlox*, and many others, distinguished either by beauty or fragrance, and sometimes by both. It will be requisite to give a few general directions for the propagation and culture of flowers of this description, which are by far too numerous to allow us to consider each separately.

All the various modes of propagation, seed-sowing, division, laying, and striking by slips, are resorted to according to the species and varities to be propagated.

Seed-sowing.—Some sorts of perennials, such as the large flowered and the everlasting peavetches (*Lythyrus grandiflorus* and *L. latifolius,)* will not blow for at least two and sometimes several years after sowing, while several other species may blow the same year, provided that they are either sown early, or at first brought forward on heat. It is requisite to bear this in mind to prevent disappointments, by trusting to works which state that they will "blow the following year." I cannot, of course, particularize all the sorts in which this diversity as to the time of blowing takes place; for even if it had been recorded, as it is not, by botanists or practical florists, it would occupy more space than could here be spared.

The best time of sowing all hardy seeds of this kind is the same as for hardy annuals, in order to bring them forward to make strong plants by the autumn. Should they be sown earlier, therefore, than they may be well able to stand in the seed leaf, any inclement weather that may occur may be warded off by the ingenious plan first proposed by Mr. J. Harrison, with respect to annuals, of covering them with inverted garden pots, as directed. Independent of every other consideration, this is very effectual in protecting the sown seeds as well as the seedlings, when just up, from the depredations of sparrows and other birds, which frequently entirely destroy the most valuable sowings. [*Hort. Trans.*

The depth at which the seeds should be buried in the ground will depend on their magnitude. Peas or lupins may be planted about an inch or less in depth, while such seeds as those of *Lychnis* must be very thinly covered to insure their germination. It is on this account that seeds, which are buried deep, when turned up several years afterwards, often germinate. If the larger seeds again are not put deep enough, the roots do not establish themselves so strongly.

It is also necessary to be aware that most seeds are rendered difficult to germinate by being kept longer than one year. In consequence of this, among fifty sorts of Alpine seeds which I

purchased at Chamouni, in Switzerland, not one germinated. Some species are not affected by being kept many years, but this is an exception rather than a rule.

When seeds are gathered before they are quite ripe, it has been proved by experiment that they germinate sooner than very ripe ones: obviously because the nutrient matter is less hard and more easily diluted with water,—an indispensable material in producing germination. But though seeds, when gathered before they are quite ripe, germinate sooner than riper ones, it does not follow that they will produce the best plants; yet as variety in the colors and forms of flowers often appear to depend on some derangement or weakening of their natural constitution, the sowing of under-ripe seeds may have a chance to surprise the florist with new and valuable varieties.

Most double varieties, from not producing seed (though some double flowers do,) as well as those with variegated leaves, cannot be propagated by seed, and therefore recourse must be had to the other modes of propagation.

Management of seedlings.—According to the nature of the various sorts, it will be necessary to strengthen them by pricking out from the seed bed, and afterwards transplanting.

Some sorts do not bear well with transplanting and shifting; such as the pea-vetches mentioned in the preceding section, as this would be certain to prevent them from blooming for at least a whole year.

Other sorts again are as much improved by it, as is well known to be the case in kitchen gardening with cabbage, celery, parsley, leeks, and lettuce. The check in the growth, caused by pricking out and transplanting, is, in the sorts it agrees with, advantageous, because the leaf pulp becoming much thickened by the great loss of water and oxygen, when it returns to the crown of the root, it lays the basis of fresh branches, terminating in flower buds.

On the other hand, if a seedling plant were to remain unmoved in a rich soil well watered, it would probably send up more sap than the light could readily deprive of its water and oxygen, and would in consequence push out new leaves to carry off the superabundance, while there would be no pulp formed thick enough and containing enough of carbon, to produce flowers or to perfect seed.

Care should be taken not to plant the roots too deep so as to be out of the reach of atr, nor too shallow to expose them to drought. This, however, must be regulated by the sorts of roots; those which are small and fibrous requiring to be planted much shallower than those which are long, thick, and tapering, or which run far under ground like the large-flowered pea-vetch already mentioned, and the fragrant coltsfoot *(Tussilaga fragrans,)* which may with safety be planted nearly a foot deep, provided the crowns are not far buried beneath the soil. But if such genera a *Phlox, Lychnis, Trol-*

lius, *Aster*, and the like, were planted as deep, it would be almost certain to kill them.

The transplanting of some genera is very apt to check their growth, so much as to prevent their flowering not only the second, but even the third year, though it may be advantageous to transplant even with the very view of thus retarding the flowering; as it may, under judicious management, so increase the vigor of the plants, as to render the bloom much larger and finer. The perennial lupins (*Lupinus polyphyllus* and *L. Marshallianus,*) may be mentioned as examples; and another will fall to be noticed under the culture of the pyramidal bell-flower (*Campanula pyramidalis.*)

In preparing the seedling plants for removal, it may be advisable in some instances to trim off a few of the root fibres, with the view of diminishing the supply of sap, and causing new root fibres to grow; a thing which ought never to be done where luxuriance of leaves is an object, and hence the old practice of trimming both the root fibres and the branches or leaves at the same time, is in most cases highly absurd. To trim off a few of the outer and larger leaves may be useful, particularly in very warm bright weather, to prevent a greater evaporation of moisture from the leaves than the root fibres, not yet established in their new situation, can supply.

The distances at which the plants are to be put, must be regulated by the circumstances of the height and the branching out of the peculiar species. If they are planted too closely together, their roots must go to the same spot to procure nourishment, which they will consequently soon exhaust and become therefore more or less starved, while the branches and leaves, by mutually interfering, must prevent the free circulation of air; and, by overshadowing the ground, must also prevent the free circulation of water.

On the same account, it will be indispensable to keep the ground clear of weeds, and of chance seedling flowers, which when out of place may be considered as weeds.

Division of the roots.—In the case of such plants as form buds or eyes on their roots, similar to the eyes of tuberous roots, such eyes with a piece of the root may be cut off, and planted in a similar manner to that already directed for anemones and dahlias. Examples of plants which may be thus propagated, are the alpine and the narrow-leaved willow herb (*Epilobium Alpinum* and *E. angustifolium,*) the turfy evening primrose (*Œnothera caspitosa,*) various species of *Monarda*, and most of those perennial plants, exclusive of bulbs and corns, whose stems and leaves die wholly down in the winter. It is indispensable to have the places of all such plants marked before winter, so that the roots may not be injured when the ground is dug up, and that the roots may easily be found the ensuing spring.

In the end of March or beginning of April, such roots may be dug up, and cuttings containing one or more buds or eyes may be

taken and planted out to form new plants; taking care not to plant them either too deep or too shallow.

It may be requisite in the case of the more delicate sorts to nurse them a little, by planting them in the shade till they shoot, and afterwards transplanting them, but with many sorts this precaution will be necessary. The American sun-flower *(Helianthus multiflorus,)* for example, will readily grow from root cuttings planted out where they are to remain in almost any soil or situation, while *Monarda*, *Mentha*, and the willow herbs, are in this way of still more easy culture.

It is necessary to remark, however, that the young plants raised from cuttings of the roots, do not in all cases flower the same year, though this often depends on the period at which the cuttings are taken, and on the nature of their after management. When it is an object to have them flower the same year, care must be taken to forward their growth by protection in the early spring, and by watering in dry summer weather, otherwise they will not attain their due size and vigor for flowering till too late in the season.

Division of the plants.—A great number of fibrous-rooted flowers which do not form buds or eyes on the roots, and therefore do not admit of the preceding mode of propagation, may be increased by dividing the plants themselves, when these form several crowns above the roots, having root-fibres attached to each, or at least connected therewith.

These several crowns may be detached for planting out, taking care to separate along with them as many of the attached root-fibres as possible, in order to have the plants strong.

The genus globe-flower *(Trollius)* furnishes a good example of this mode of propagation, which in this case may be performed at almost any season of the year; but in order to have good plants, the spring or early in autumn are the preferable periods. All the directions indeed which have already been minutely given for the auricula and polyanthus will be applicable here. The pencilled crane's-bill *(Geranium Lancastriense,)* is another good instance.

The general rule applicable to all sorts is, to divide them either as soon as they have done flowering, when their natural season of rest commences; or early in spring, before or about the time when their most vigorous growth begins. By the first method, the plants will in general be rendered stronger for their first bloom; by the second, time will be gained where that is an object, and where not, the first flower buds may be pinched off, to render the plants strong for the succeeding season.

In cases where abundance of root-fibres can be detached, no preparatory nursing will be required, and the young plants may at once be put in where they are to remain.

It is necessary to mention that some sorts, such as the common columbine *(Aquilegia vulgaris,)* though they form very distinct

crowns, cannot be propagated in this way, detaching the crowns being certain to kill them.

Suckers, offsets, and runners.—When plants form rooted scions contiguous to the mother root at various distances, these may be detached and planted out so as to form young plants, which must of course be managed according to the nature of the sorts, and the time of taking them. Rooted suckers, such as those from the genera *Aster*, *Monarda*, and *Solidago* may be detached on their first appearance above ground, and planted out where they are to remain; while offsets, such as those of the genera, *Valantia*, *Alyssum*, *Sedum*, and the like, require to be planted out in reserve or nursery beds, to be brought forward previous to the final planting.

The spring is the best season for detaching suckers and offsets, if they can then be procured; for some shorts do not produce them till late in the summer, or even in the autumn. The cultivator will in these cases have to be guided in his operations entirely by circumstances. If the sort to be operated upon be hardy and of easy cultivation, the suckers or offsets may be removed in the autumn: but on the contrary, in some delicate sorts they had better be left till the following spring; for if they do not form roots before the setting in of the winter frosts, they will be almost certain to perish.

Runners, such as those of the genera *Potentilla*, *Viola*, and *Glechoma*, require to be detached as early as possible in spring, and carefully nursed into strong plants for final transplanting in the autumn, to flower the succeeding year. Those runners which are detached late in the summer will seldom flower for two years; but then if the runners are pinched off the next season, it will render them very strong and vigorous for blooming.

The runners of *Cymbalaria* and the like, being more of the nature of trailing shoots, require to be treated more in the manner of layers, as we shall presently direct.

Laying.—When the shoots from the sides of the crowns or near the ground cannot be detached with root-fibres to them ready formed, they may be pegged down till they acquire roots fit for allowing them to be separated with safety. The laying must be differently managed, according to the nature of the sorts to be laid. Such sorts, for instance, as Russell's cinquefoil *(Potentilla Russelliana,)* require merely to have a little earth laid over the stem of the shoot, leaving the top about an inch above ground, without cutting or twisting.

In other cases, similar management must be adopted to that directed for laying carnations, such as by forming a slit in the stem, cutting it half through in a direction sloping upwards, or on the outer bark may be ringed round, or the stem may be pierced in several directions with a brad-awl, or bound tightly round with a wire, or twisted half round,—all of which operations have the same design of checking the descent of the pulp, while the sap, going

up in the more central parts, is not interrupted, and consequently the layered branch grows as well as, if not better than, if it had not been so treated.

In order to make the layer strike root the more readily, the earth around it should neither be too lose nor too firm—too dry nor too moist. In the latter case, indeed, it might cause the cut part to produce canker, and rot the whole shoot.

It may easily be ascertained whether a layer have pushed root-fibres, by removing a portion of the earth around the part pegged down, when it will be seen whether roots are running into the soil.

About the end of autumn, layered plants are for the most part furnished with new roots, to feed them without farther dependence on the parent plant; but they are in general still weaker than seedlings, and require not only to be watered, but the more delicate sorts not exposed to too bright sunshine.

(To be continued.)

THE ROSE-BUG.

To the Editor of the American Farmer:

This little insect wherever it is known at all is known to be extremely destructive to some other flowers as well as the rose, and is sometimes so numerous as to destroy all the early cherries, the hautboys, the grapes, and sometimes the more delicate varieties of the peach. Many years ago I have often lost all these fruits except some of the varieties of the peach by these destructive insects. Of late years they have done me little or no injury, and they are nearly extirpated from my premises—they are only to be seen at the places of their destruction—these are *Linden trees when in blossom.* When these trees first begin to blossom about my yard and garden, at one of them over a hard naked walk. I was surprised to find the rose bug, which had been vastly numerous and destructive for many years before, dead in great quantities under it—as many as a pint or quart might be swept up under it at a time *dead.* My first impression was, that the bugs died about the linden tree after depositing their eggs and terminating their natural career, but such is not the fact, and I now speak with confidence after several years observation and experience when I say, the blossom of this tree destroys them, and will extirpate or nearly so the race from its immediate vicinity, on the farm on which they grow. This fact seems to be out of the ordinary course of nature, for we are taught to believe that all animals in a natural state are led by the wise instinct of nature to avoid that which will poison or destroy them. In rushing into the enjoyment of the delicious fragrance and honey of this flower, they precipitate themselves on their own destruction.

I state the *fact*, for the information of florists and fruiterers, and hope that those better skilled in philosophy and natural history, may solve the seeming heterodoxy of it.

On visiting Mr. George Law's residence at the west end of your town some days since, which may well be styled the "*multum in parvo*" of good and pretty things, I could but ask the question why our brother farmers should send to New England for pigs, when they may find all the European improved varieties in Mr. Law's possession, bred with great care, and which may be bought at prices much lower than the prices at the north? Is a thing better in proportion to the distance you go after it, and the risk of its loss you run in transporting it—or is an animal bred in Europe and costing thirty guineas, with the cost of transportation added—better than the same animal bred in this country from the same parents at a cost of twenty dollars? This is another problem which I will thank you, Mr. Editor, to solve. T. E.

ON CHANGING COLOR OF THE FLOWERS OF THE HYDRANGEA.

WHILE looking over the Farmer's Register, we noticed an article on the Hydrangea. We think, perhaps, some of our female friends who love and cultivate this beautiful flower, might avail themselves of the information afforded in that work. It is mentioned that the best compost for the growth of the plant, is, one half rich garden loam, one fourth old hot bed manure, and one fourth course sand, the whole extent to be mixed together. The plant should stand in a situation where it would receive the morning or evening sun for an hour or two. When the buds begin to expand, or after they have opened, the plants should be watered with water in which have been dissolved saltpetre and oxyde of iron, in the following proportions:—to a table spoon full of saltpetre, and half a one of oxyde of iron, add one pail of water; these should be well stirred together, and the whole allowed to stand exposed to the atmosphere a day or more, or until it has acquired the temperature of 70 degrees. This mode of treatment is said to produce a most beautiful variety and blending of colors. If any one should think proper to try the experiment in the summer, we should feel much gratified to see a particular account of its success. SARAH.

Davidson County.

BUDDING ROSES.

Dr. Van Mons buds roses in June, so that they grow and frequently blossom the same year. He prepares the young and unripe wood by separating the leaves, leaving only the foot stalks; two weeks after the buds are swollen and fit for insertion; at the time the bud is put in, the stock is cut off six inches above it. They are bound with bass matting, previously drawn through a solution of alum and white soap, and dried, which completely excludes water.

THE ORCHARD.

OF PRUNING.

[CONCLUDED FROM PAGE 107.]

In the nurseries it is a universal practice to prune the roots of transplanted trees; in gardens, this is as seldom performed. Which is right? If a wounded or bruised root is allowed to remain upon a transplanted tree, it is apt to decay, and this disease may spread to neighboring parts, which would otherwise be healthy; to remove the wounded parts of roots is therefore desirable. But the case is different with healthy roots. We must remember that every healthy and unmutilated root which is removed is a loss of nutriment to the plant, and that too at a time when it is least able to spare it; and there cannot be any advantage in the removal. The nursery practice is probably intended to render the operation of transplanting large numbers of plants less troublesome; and, as it is chiefly applied to seedlings and young plants with a superabundance of roots, the loss in their case is not so much felt. If performed at all, it should take place in the autumn, for at that time the roots, like the other parts of a plant, are comparatively empty of fluid; but, if deferred till the spring, then the roots are all distended with fluid, which has been collecting in them during winter, and every part taken away carries with it a portion of that nurture which the plant had been laying up as the store upon which to commence its renewed growth.

It must now be obvious that, although root-pruning may be prejudicial in transplanting trees, it may be of the greatest service to such established trees, as are too prone to produce branches and leaves, instead of flowers and fruit. In these cases the excessive vigor is at once stopped by removal of some of the strongest roots, and consequently of a part of the superfluous food to which their "rankness" is owing. The operation has been successfully performed on the wall trees at Oulton, by Mr. Errington, one of our

best English gardeners, and by many others, and, I believe, has never proved an objectionable practice under judicious management. Its effect is, *pro tanto*, to cut off the supply of food, and thus to arrest the rapid growth of the branches; and the connexion between this and the production of fruit has already been explained. It is by pushing the root-pruning to excess that the Chinese obtain the curious dwarf trees which excite so much curiosity in Europe. Mr. Livingston's account of their practice is so instructive, and contains so much that an intelligent gardener may turn to account, that I think it worth repeating here.

"When the dwarfing process is intended, the branch which had pushed radicles into the surrounding composition in sufficient abundance, and for a sufficient length of time, is separated from the tree, and planted in a shallow earthenware flower-pot, of an oblong square shape; it is sometimes made to rest upon a flat stone. The pot is then filled with small pieces of alluvial clay, which in the neighborhood of Canton is broken into bits, of about the size of common beans, being just sufficient to supply the scanty nourishment which the particular nature of the tree and the process require. In addition to a careful regulation of the quantity and quality of the earth, the quantity of water, and the management of the plants with respect to sun and shade, recourse is had to a great variety of mechanical contrivances, to produce the desired shape. The containing flower-pot is so narrow, that the root pushing out towards the sides are pretty effectually cramped. No radicle can descend; consequently it is only those which run towards the sides or upwards that can serve to convey nourishment properly, and it is easy to regulate those by cutting, burning, &c., so as to cramp the growth at pleasure. Every succeeding formation of leaves becomes more and more stinted—the buds and radicles become diminished in the same proportion—till at length that balance between the roots and leaves is obtained which suits the character of the dwarf required. In some trees this is accomplished in two or three years, but in others it requires at least twenty years," *(Hort. Trans.*, iv. 229.)

We have still to consider that particular kind of pruning which is technically called *ringing*. This consists in removing from a branch one or more rings of bark, by which the return of sap from the extremities is obstructed, and it is compelled to accumulate above the ring. Mr. Knight explains the physiological nature of the operation so well, that I cannot do better than quote his words.

"The true sap of trees is wholly generated in their leaves, from which it descends through their bark to the extremities of their roots, depositing in its course the matter which is successively added to the tree; whilst whatever portion of such sap is not thus expended sinks into the alburnum, and joins the ascending current, to which it communicates powers not possessed by the recently absorbed fluid. When the course of the descending current is

intercepted, that naturally stagnates and accumulates above the decorticated space; whence it is repulsed and carried upwards, to be expended in an increased production of blossoms, and of fruit: and, consistently with these conclusions, I have found that part of the alburnum which is situated above the decorticated space to exceed in specific gravity, very considerably, that which lies below it. The repulsion of the descending fluid, therefore, accounts, I conceive, satisfactorily, for the increased production of blossoms, and more rapid growth of the fruit upon the decorticated branch; but there are causes which operate in promoting its more early maturity. The part of the branch which is below the decorticated space is ill supplied with nutriment, and ceases almost to grow; it in consequence operates less actively in impelling the ascending current of sap, which must also be impeded in its progress through the decorticated space. The parts which are above it must, therefore, be less abundantly supplied with moisture; and drought, in such cases, always operates very powerfully in accelerating maturity. When the branch is small, or the space from which the bark has been taken off is considerable, it almost always operates in excess; a morbid state of early maturity is induced, and the fruit is worthless.

"If this view of the effects of partial decortication or ringing, be a just one, it follows that much of the success of the operation must de dependant upon the selection of proper seasons, and upon the mode of performing it being well adapted to the object of the operator. If that be the production of blossoms, or the means of making the blossoms set more freely, the ring of bark should be taken off early in the summer preceding the period at which blossome are required: but, if the enlargement and more early maturity of the fruit be the objects, the operation should be delayed till the bark will readily part from the alburnum in the spring. The breadth of the decorticated space must be adapted to the size of the branch; but I have never witnessed any except injurious effects, whenever the experiment had been made upon very small or very young branches, for such become debilitated and sickly, long before the fruit can acquire a proper state of maturity."

The effects of ringing in altering the appearance of the fruit is very striking. In the *Horticultural Transactions*, iii. 367., the following cases are reported:—In a French crab, the fruit, by ringing, was increased to more than double the size, and the color of it was much brightened. In a Minshull crab the size was not increased, but the appearance of the apple was so improved as to make it truly beautiful; its colors both red and yellow, were very bright. In the Courtpendu apple the improvement was still more conspicuous, the colors being changed from green and dull red, to brilliant yellow and scarlet. Many others of a similar kind are to be found recorded in books on horticulture. It is, however, by no means alone to the maturation or production of fruit that this opera-

tion is applicable: it will, of course, induce also the production of flowers, and it has been occasionally used for that purpose, as in the Camellia. It is best performed in the early spring when the bark first separates freely from the wood.

This operation has, however, the disadvantage of wounding a branch severely; and, if performed extensively upon a tree, it is very apt, if not to kill it, at least to render it incurably unhealthy; for if the rings are not sufficiently wide to cut off all communication between the upper and lower lips of the wound they produce little effect, and if they are they are difficult to heal. For these reasons the operation is but little employed, other means being used instead. By some persons ligatures are made use of, and they will be preferable if they answered the purpose of obstructing the sap to the same extent as the abstraction of a ring of bark. In Malta, one of the objects of ringing, that of advancing the maturation of the fruit, is practised on the zanzibey, or jujube tree, by merely fixing in the fork of a branch a very heavy stone, made fast with bandages; its weight forces the branches a little into a horizontal direction, and thus, independently of the pressure it exercises upon the parts it touches, obstructs the free circulation of the sap.

MISCELLANEOUS.

A STEAM BOILER WORTH HAVING.

T. Fanning, Esq., editor Nashville Agriculturist, gives the following account of a steam boiler of his invention:

"I have been studying some time how to construct a cheap and convenient steam boiler, sufficient to cook food for the horses, cattle and swine on my little farm, and I have at length succeeded exactly to my notion. I purchased a kettle holding 60 gallons, for which I paid $9, and with the labor of two hands for one day I constructed a furnace out of rough limestone, the cost of which was one dollar more; I then made a box of rough plank three feet square at the bottom, and high enough to hold about ten bushels; the box was perforated with many holes, by the use of a five quarter auger. The bottom of the box is made with planks 6 feet long, to afford projections to lift it on and off of the kettle. When the cooking process is going on, the top of the box is covered with a piece of carpet, or a close-fitting plank cover to keep in the steam. In using this apparatus, a bushel or two of corn or roots may be put in the kettle, and the box filled with cut oats, corn stocks, turnip tops, beets, potatoes, or any thing else that grows on the farm, and the whole may be thoroughly cooked in the course of an hour or two. The machine will not cost more than eleven dollars, and I consider it worth more on a farm then the best hand that labors in the field."

PRUSSIC ACID.

A short time ago a gentleman residing at Herfordshire, wishing to destroy a useless dog, administered to it about twenty drops of Prussic acid. The animal almost immediately became paralysed, but appearing likely to linger for a short time, the owner intending to put it out of its misery, threw it into a pond; the dog, however, having felt the effects of the water, immediately swam out, shook itself, and appeared as if nothing whatever had occurred. It may not be generally known that throwing cold water over the head of an animal, completely neutralizes the deadly poison.

[*English paper.*

OXFORD SAUSAGES.

The following recipe for making the celebrated Oxford Sausages, so much desiderated by the lovers of good eating in England, is from a late English publication.

Ingredients: One pound and a half of pig meat cut from the griskins without any skin, and a half pound of veal. One pound and a half of beef suet, the yolks and whites of five eggs. A desert spoonful of sifted sage, after being well dried. Pepper and salt to taste.

How to make the above into Sausages: Chop the meat into small pieces and then pound it together in a marble mortar till it is short and tender.

Chop the suet very fine, and when the eggs are well beaten together, after the white specks are taken out, pour the liquid over the pounded meat and chopped suet, well kneading it together with a clean hand, throwing in the sifted sage, and pepper and salt from a coarsish pepper box during the operation, so as to let them impregnate the whole mass without being predominant in any part of it.

Press the whole when well mixed into a wide mouthed jar, and keep it from the air in a cold place.

Roll the sausages on a flour board, and use very little grease in frying them, as they will be almost fat enough to fry themselves with the aid of a frying pan.

PERIOD OF GESTATION IN COWS.

One of the most satisfactory experiments relating to the subject, on record, is the one made by Earl Spencer, and the particulars of which are given in the second number of the English Agricultural Society's journal.

The table given, contains the result in the case of seven hundred and sixty-four cows, and the following statement abridged from the paper, will exhibit some of the most important of the details.

First. It appears that the period of gestation varied from 220 to 313 days: or no less then 90 days.—Lord Spencer was, however, unable to rear any calves produced under 242 days. All under 260

days, and over 300, he thinks are decidedly premature, or irregular.

Second. As 314 cows calved before the 283d day, and 310 after the 285th day, the average period of gestation must be considered as between 284 and 285 days; although the time stated in the work on cattle by the London Society, states it at 270 days.

Third. It appears, that omitting these considered as premature or irregular, the cows whose period of gestation did not exceed 286 days, produced 223 cow calves, and of bull calves 234; while from those whose period exceeded 286 days, the cow calves were only 90, and the number of bull calves was 152. This certainly gives some support to the opinion prevalent among farmers, that when a cow exceeds her usual time, the produce will be a bull calf.

Fourth. There were 7 cases of twin cow calves; 5 cases of twin bull calves; and 11 cases of twin cow and bull calves. Earl Spencer has never had a case in which the sexes were different, in which the heifer was a breeding one; they have uniformly been what are termed *free martins.* The cattle of which the above record has been kept, are the pure improved short horn breed, and of the finest herds in Great Britain. [*American Farmer.*

A POTATO diet is found greatly to improve the quality of the blood. Hence roasted or baked potatoes are successfully employed as a specific against the sea scurvy, when other remedies have failed. This discovery was made in France. It is singular that boiled potatoes do not seem to have the same good effects.

GARDENER'S CALENDAR FOR MARCH.

VEGETABLE GARDEN.

Sow carrots, beets, Swiss chard, parsnips, salsafy, cabbages spinach, turnips, leeks tomatoes, peppers, radishes, lettuce and Guinea squash. Plant cucumbers, okra squashes, melons, snapbeans, cushaws, sewee beans, New-Zealand spinach. Transplant tomatoes, peppers, Guinea squash, cabbages and lettuce.

Remarks.—All of the above vegetables should be got in at as early a period as possible. Carrots should now be sown for a full crop, and sufficient to last until the autumn, as it will be difficult to get them up during the summer, but if sown with this view English seeds must be procured. The lettuce should be sown where they are to remain, as they are then less liable to run to seed. The New-Zealand spinach should be sown in hills 3 feet apart each way. Radishes should be sown once every three weeks, in order that there may be a regular succession. All Irish potatoes ought to be planted this month as they do not answer well after. Should the season be mild, most of the vegetables mentioned in March, may be sown towards the last of the month.—*Miller's Planters' and Merchants' Almanac for* 1842.

Agricultural and Horticultural REPOSITORY.

No. 51 [illegible] CHARLESTON, [illegible]

FRESH AND GENUINE

GARDEN AND FIELD SEEDS.

THE SUBSCRIBER has received by the [illegible] a supply of GARDEN AND FIELD SEEDS, consisting of all the varieties enumerated in Buist's Catalogue, all of which are new. Among them are the highly prized SWEET ORANGE CARROT, which unites the flavor of the Carrot and Parsnip, (an account of which see Farmers' Ed. Ag., p. 311.) Also, WHITE BELGIAN CARROT, said to be equal for patterning to the Orange Kind; and SUGAR PARSNIP.

Twenty-five varieties of PEAS, among which are Cedo Nulli, Prince Regent, Dwarf Early Warwick, Knight's Tomatoe, Blue Imperial, Dwarf Blue Imperial, Holland, Spanish Morocco, and all of the old varieties.

BEANS—nineteen varieties, among which are Dwarf Dutch Kidney, Large China, Royal Dwarf, Horticultural, &c. &c.

BEETS—eight varieties, consisting of Early Turnip (red and yellow) Long Blood, Yellow Castelnau, Red Mangel Wurtzel, Sugar, &c. &c.

CABBAGES—twenty-nine varieties, among which are Early York, Sugar Loaf, Nonpareil, Hope, Wyman, Early Dutch, Oxheart Cabbage and Savoy, Battersea, St. Denis, Early Dwarf, Large &c. Large Flat Dutch Savoy, Tours, Montrouge French Savoy, &c. &c.

BROCOLI—three varieties.

CAULIFLOWERS—six varieties, viz.: Turner or Spring, Walcheren or autumn, Hardy of Paris, Dutch Hardy, Early and Late.

CARROTS—nine varieties. PARSNIP—two varieties. [illegible] varieties. CRESS—three varieties. LETTUCE—[illegible] CUMBER—four varieties. SQUASHES—[illegible] Musk—nineteen [illegible] Canteloupe, Sugar, Persian, Water, and many [illegible] Also, six varieties of American WATER MELONS—[illegible] KOHL RABBI—four varieties.

Together with many new and capital varieties of VEGETABLES not enumerated above, for which see future printed catalogue.

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FLOWER SEEDS, DAHLIA ROOTS, (many splendid varieties) BULBOUS ROOTS, ROSES, GERANIUMS, GREEN-HOUSE PLANTS, FRUIT TREES,

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His STOCK OF SEED POTATOES has been considerably increased, and embraces a large variety of the most [illegible] offered in this market. His PEACHES are [illegible] taken [illegible] COMMON SEEDS [illegible] $3 to $5, according to size and quality. He has [illegible] MENT OF STEEL-CUTTERS and CORN-SHELLERS, with EVERY OTHER IMPLEMENT REQUIRED on the FARM or PLANTATION.

Printed Catalogues will be furnished gratis on application (post paid) and all Orders promptly executed. SEEDS and IMPLEMENTS carefully packed and sent by Steamboat or Railroad, to any part of this State, North Carolina or Georgia.

November 4th, 1841. J. D. LEGARE.

CHEMICAL ANALYSIS OF [illegible]

MARLS, LIMESTONES, MINERAL WATERS [illegible]

ORES GENERALLY.

PROF. SHEPARD of the South Carolina Medical College, begs leave to inform the public that he has fitted up a department in his Laboratory expressly for the performance of the above mentioned undertakings; and that all orders of this nature, with which he may be favored, will receive his prompt personal attention.

Address Prof. C. U. SHEPARD, Medical College, Charleston.

☞ The following payments have been made since our last:—Dr. H. C. Glover, W. B. Seabrook, S. G. Deveaux, M. Skottowe, T. A. Coffin, Edward Turner, Reuben C. Shorter, C. C. Pinckney, O. H. Middleton, Judge Evans, B. A. Elliott, J. R. Vallé.

ON OLD ACCOUNT.—Charleston Library, D. McDowall, Dr. M. R. Frost.

NOTICE.

The Subscriber finding it inconvenient to attend to any other than the Editorial duties, requests that all letters on business be directed to the Publisher of this Journal, Mr. A. E. Miller, who will also attend to all the business transactions relating to the Southern Cabinet or Southern Agriculturist.

Dec. 3d, 1841. J. D. LEGARE.

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THE SUBSCRIBER still continues to improve his superior breed of BERKSHIRE SWINE, by crossing with the best imported stock in the country. He has now on hand several very fine litters, and can supply them who wish to purchase, at $20 cash per pair, two months old, delivered on board of any vessel in New York, free of charge. Many of his stock have been sent to several distinguished agriculturists in South Carolina, and have given universal satisfaction.

WM. R. PARSONS.

Flushing, (Long Island,) Dec. 18, 1841. 3

BOOK-BINDING.

BINDING OF THE AGRICULTURIST AND OTHER BOOKS will be done neatly, and cheap, if sent to the office of the Publisher. [illegible] have been furnished. WILLIAM ESTELL, Binder.